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PERSPECTIVES

ON LABOUR AND INCOME

SPRING 1991

- CANADA ENTERS RECESSION
- ARE APPRENTICESHIP PROGRAMS SUCCESSFUL?
- INTERVIEW:
GAIL COOK JOHNSON
- CASH TO SPARE?
- TODAY'S UNEMPLOYED



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ON LABOUR AND INCOME

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On the cover:

Stairway to Heaven
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Articles

SPECIAL INSERT

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Philip Cross

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7 Apprentices: Graduate and drop-out labour market performances

Ernest B. Akyeampong

Apprenticeship programs in Canada are characterized by high drop-out rates, a shocking statistic in light of the need for a skilled work force. Using the recent National Apprenticeship Survey, the author examines both graduates and drop-outs from provincial apprenticeship programs by occupation, wages and regions.

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In 1989, unemployed persons differed greatly from the unemployed in 1980. Not only were they older and better educated, but they were also more apt to be from Western Canada.

Symbols

The following standard symbols are used in Statistics Canada publications:

- .. figures not available
- ... figures not appropriate or not applicable
- nil or zero
- amount too small to be expressed
- P preliminary figures
- r revised figures
- X confidential to meet secrecy requirements of the Statistics Act

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PERSPECTIVES

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Forum

From the editor

■ Regular readers may notice a small but, we hope, significant change in our format recently: we now list the contents of "Sources", just as we do with all the other articles. I draw this to your attention because it stems from the readership survey conducted several months ago. (Your comments have given us much to consider, and we are implementing a number of your ideas as opportunities arise. However, because many of them relate to content, it may be some time before their impact filters down.)

In the course of the survey, few people reported reading "Sources". This was perplexing because the market research conducted when we were first developing *Perspectives* strongly suggested that we include a regular "news bulletin" on labour and income issues, providing brief summaries of new survey results, updates of ongoing surveys, newly released studies and so on. When we didn't hear the same enthusiasm echoed in the readership survey, we concluded that something must be amiss. And since readership survey respondents who did read "Sources" found it very useful, it seemed possible that the problem could be the title itself.

Nowadays, the word "sources" is used in many publications as a synonym for "bibliography". (*Perspectives* is not blameless: at the bottom of each chart and table is the inscription "Source".) Yet equating our "Sources" with "bibliography" is not appro-

priate. Far from simply providing more information about articles you've just read, the intent of "Sources" is to bring to your attention some of the "happenings" in a subject area relevant to your interest or profession.

In "Sources", we print sufficient information about a product or project for readers to assess its value to them, to find out when it will be released, and whom to contact for more details. For example, this edition of "Sources" covers the series of graduate surveys, which collect longitudinal data on the working experience of people who have graduated from postsecondary institutions. The survey manager expects the preliminary results of the most recent survey to be released some time in late 1991, and Bill Magnus and Yigal Messeri are the people to call if you want to know more. "Sources" also carries selected results of completed surveys, summarizes highlights of studies and research papers, and provides ordering information for publications and special reports.

If people are reticent about reading it because they are not certain what "Sources" contains, listing its contents should help them decide if it is worthwhile to scan it. If you haven't read "Sources" before, you might want to skim through your old copies of *Perspectives*. "Sources" could have just what you're looking for.

Ian Macredie
Editor-in-Chief

□

We welcome your views on articles and other items that have appeared in *Perspectives on Labour and Income*. Additional insights on the data are also welcome, but to be considered for publication, communications should be factual and analytical. We encourage readers to inform us about their current research projects, new publications, data sources and upcoming events relating to labour and income.

Statistics Canada reserves the right to select and edit items for publication. Correspondence, in either official language, should be addressed to: Susan Crompton, Forum and Sources Editor, *Perspectives on Labour and Income*, 5-A Jean Talon Building, Statistics Canada, Ottawa, K1A 0T6, or call (613) 951-0178.

Look it up in "Sources"

What's new?

- ▶ Surveys of transitions from school to work
- ▶ National child care survey expected to produce avalanche of studies and recommendations
- ▶ General Social Survey begins second round of survey cycles
- ▶ Change in calculation of labour income
- ▶ "New and improved" annual averages from the Labour Force Survey
- ▶ The demographic situation in Canada

Highlights

Here are some key findings from the articles in this issue of Perspectives on Labour and Income.

Apprentices: Graduate and drop-out labour market performances

■ During 1986 and 1987, about 50,000 apprentices left their training, either as graduates or drop-outs. Approximately 4 in 10 dropped out before meeting graduation requirements.

■ In the more popular trades, the highest drop-out rates were observed among cooks and bakers (53%), carpenters (50%) and vehicle body repairers (49%). Drop-out rates were lowest among electricians (31%), and barbers, hairdressers and beauticians (27%).

■ Among those who completed their apprenticeship requirements, 88% were employed in their trades two to three years later. Among those who dropped out, less than one-third were working in their trades.

■ Persons who had completed the program requirements in their trades were making \$15.78 an hour, on average, compared with \$13.50 an hour for those who had dropped out of their apprenticeship programs. Nevertheless, the gap is not as large as expected when one considers the number of years of training required for graduation.

Gail Cook Johnson speaks out on human resource issues

■ "I think education and training and development are keys to Canada's competitiveness. There aren't many differences between American and Canadian organizations, but the key one is that Americans train and develop their people and make them feel as though they're using all their skills to a far greater extent than Canadians do."

■ "Our baby boomers now are at their most productive age. Thirty-five year-olds like to bounce out of bed and do things for twelve hours a day. At some point, though, they're going to reach their mid-life crisis.... They're not going to want to work the same way; they're going to have to work smarter and not harder."

Tracking down discretionary income

■ Discretionary income can be defined as "the amount of money which would permit a family to maintain a living standard comfortably higher than the average for similar families".

■ In 1986, the amount of spendable discretionary income in the economy was estimated to be \$28.9 billion in the hands of one-quarter of the households in Canada. These 2.1 million families, with an average before-tax income of \$63,000, had approximately \$13,500 in "extra cash".

■ Over one-quarter of households with discretionary income consisted of two people. They controlled one-third of the total discretionary income. However, married couples with children had slightly more household discretionary income than did couples without children, perhaps because childless couples were younger and therefore had lower income.

■ Families headed by persons aged 25 to 29 had the lowest level of discretionary income. As the household head's age increased, so did the amount of discretionary income, peaking at \$17,472 for households headed by persons aged 45 to 49. The level remained fairly stable until the household head reached retirement age.

Then and now: The changing face of unemployment

■ Although the unemployment rate stood at 7.5% in both years, 1989 averaged 1,018,000 unemployed persons compared with 865,000 persons in 1980. This increase of 18% in the number of unemployed occurred in parallel with the rapid expansion of the labour force.

■ Between 1980 and 1989, unemployment declined among 15 to 24 year-olds, largely due to rising school attendance and increased part-time employment. In addition,

the decline also reflected the shrinking youth population – from 4.6 million in 1980 to 3.8 million in 1989.

■ At the same time, unemployment was higher among persons aged 25 to 44. Their number rose by more than 60% and their share of total unemployment climbed from 37% to 52%.

■ Higher educational attainment has not reduced unemployment. In 1980, about one in five unemployed persons had primary school education or less. A similar number of unemployed had at least some post-secondary education. By 1989, the unemployed had higher levels of education. Over one in four unemployed had some postsecondary education and only one in seven unemployed had primary school education or less. In fact, 7% of the unemployed in 1989 – 75,000 persons – had a university degree.

■ In 1980, unemployment could be divided into three almost equal parts: one-third in Ontario, one-third in Quebec and the final third in the rest of the country. Over the decade, the pattern shifted substantially. By 1989, Western Canada's share of unemployment accounted for nearly one-third of the national total (up from 20% in 1980), while Ontario and Quebec's combined share had fallen to 57%. □

Apprentices: Graduate and drop-out labour market performances

Ernest B. Akyeampong

Canada's provincial apprenticeship programs are characterized by high drop-out rates. Over 40% of the 50,000 participants leaving the programs in 1986 and 1987 failed to complete their training requirements. This rate is surprisingly high in view of the acknowledged growing need for a skilled national work force.

The high incidence of dropping out raises several serious questions, and the answers to some of them are revealed in the data obtained from the National Apprenticeship Survey (see *The National Apprenticeship Survey*). For example, the survey results suggest that the structure and delivery of the apprenticeship programs actually encourage many participants to drop out.

Furthermore, the data show that the economic costs of dropping out are not overly high. Program graduates do not appear to enjoy significant advantages in terms of post-apprenticeship employment experiences and earnings. And this is generally true whether or not former participants practise in their apprenticeship occupation.

Participant profile and apprenticeship trades

During 1986 and 1987, about 50,000 participants left apprenticeship training

programs as completers (graduates) or drop-outs. Of these, an overwhelming majority (88%) were men. The average age of the trainees at the time they left was around 27 years.¹ More than 1,000 were 45 years old or over, while those under 20 numbered less than 100.

About 52% of participants had high school diplomas; another 30% left high school without graduating; 4% had no high school education; and the remaining 14% had some postsecondary education.

Slightly more than two-thirds of the apprentices were employed immediately prior to registering in the programs. Of these, three-quarters had actually spent some time working in their apprenticeship trades. One-fifth were following in a parent's occupational footsteps. Close to half had been referred to the programs by their employers, and another third by friends and relatives.

The most popular trades pursued were motor vehicle mechanics, with 17% of registrants; barber, hairdressing and beautician trades (11%); electrical trades (10%); carpentry (9%); and plumbing (7%). Women apprenticed mainly in traditional occupations: three-quarters were registered in the barber, hairdressing and beautician trades programs, and another 12% in cookery and bakery trades.

Ernest B. Akyeampong is with the Labour and Household Surveys Analysis Division. He can be reached at (613) 951-4624.

The National Apprenticeship Survey

The National Apprenticeship Survey (NAS) was conducted by Statistics Canada in November 1989 and March 1990 on behalf of Employment and Immigration Canada (EIC). The survey formed part of a series of enquiries commissioned by EIC to study the labour market impact of "postsecondary" education in Canada. (The other notable study, reported on in the Spring 1990 issue of this publication, surveyed 1982 university and community college graduates – see "The graduates of '82: where are they?")

The NAS covered people who graduated from or dropped out of provincial apprenticeship programs in 1986 or 1987. The survey addressed, among other things, the main activity of participants prior to registration, their evaluation of program structure and delivery, their immediate and medium-term post-training attachment to the apprenticeship trade, and their overall post-program labour market experiences.

Because Quebec has a special arrangement with the federal government regarding postsecondary training, pre- and post-apprenticeship administrative data collected by EIC on apprentices are not extended to those trained in Quebec. For this reason, apprentices trained in Quebec were not covered by the NAS.

Detailed information on the NAS is available from Phil Stevens, Household Surveys Division of Statistics Canada, at (613)951-9481.

Drop-out rates and reasons

Approximately 41% of the participants leaving the programs did not complete either or both of the on-the-job and classroom training requirements. The drop-out rate for men (41%) was slightly higher than for women (35%), but significant variations were observed between age groups, province of training, and the trade pursued.

Young people – those with the least exposure to the chosen trade prior to apprenticeship – were the most likely to drop out. Indeed, all 95 teenage apprentices failed to complete their programs, as did more than half of the 20 to 24 year-olds. Lack of interest in the chosen trade was cited by many of these young people as a reason for leaving. The drop-out rate for those 25 and over was a bit lower, around 35%.

Provincially, the highest drop-out rate was recorded in Prince Edward Island, where close to 70% failed to complete their training. Over half dropped out in Saskatchewan as well. The lowest rates were in British Columbia and Alberta, where about one in three did not stay until the end.

Of the more popular trades, the highest drop-out rates were observed among cooks and bakers (53%), carpenters (50%),

Canada's apprenticeship programs

Canada's provincial apprenticeship programs – which are among the oldest forms of industrial training in the country – are a mixture of on-the-job and formal classroom training. The only exception is in Quebec, where formal classroom training is not included. In Quebec the theoretical training is an integral part of, and not separate from, on-the-job training.

Apprenticeship training falls under provincial jurisdiction. Therefore, there are significant differences among the provinces regarding program structure and delivery, and certification requirements. Program funding, however, is provided by both provincial and federal governments and employers.

About 290 trades are covered under the apprenticeship programs, though the actual number offered varies from province to province. The major trades (in terms of number of registrants) are in the construction; automobile; cookery and bakery; and the hairdressing, barbering and beautician occupations.

The award of certification rests with the provinces, but the requirements vary from one province to another. For certain trades (such as plumbing and motor vehicle mechanics), provincial certification is generally required before an individual can practise in the trade; for others, such as bricklaying, this is not usually required. Moreover, certification in one province does not necessarily qualify an individual for work in another, though the Canadian Council of Directors of Apprenticeship is promoting an acceptable interprovincial qualifying standard through the issue of "Red Seals". The required length of training for certification also varies from trade to trade and from province to province. In Ontario, for example, this ranges from one year (or 2,000 hours) for a junior baker to five years (or 9,000 hours) for construction electricians, farm equipment mechanics, and plumbers.

Around 100,000 to 110,000 apprentices are registered in the programs at any given moment. About 15,000 to 20,000 participants successfully complete their programs each year, but between 10,000 to 15,000 discontinue during the same period.

Table 1
Program leavers and drop-out rates by province* or territory of training, 1986 and 1987

	Participants leaving programs	Drop-out rate %
Canada	49,620	40.6
Newfoundland	1,280	41.1
Prince Edward Island	340	69.7
Nova Scotia	2,350	44.4
New Brunswick	1,820	49.1
Ontario	16,320	42.3
Manitoba	1,640	40.2
Saskatchewan	2,030	56.7
Alberta	13,950	36.7
British Columbia	9,580	36.1
Yukon	110	55.1
Northwest Territories	200	48.0

Source: National Apprenticeship Survey, 1989/90

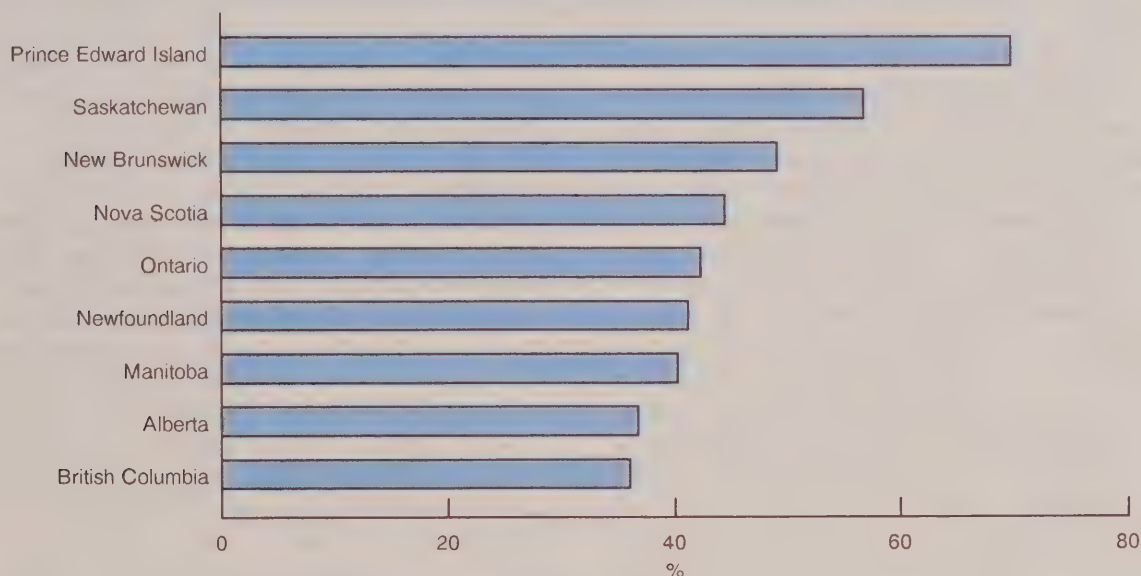
* See chart note below.

and vehicle body repairers (49%); the lowest rates were among electricians (31%), barbers, hairdressers and beauticians (27%). For two other popular trades – plumbing and motor vehicle mechanics – the incompleteness rates were 39% and 43%.

The survey respondents indicated four broad reasons for dropping out. First, there was dissatisfaction with certain program aspects. About 17% complained that the subjects covered in the classroom were not well related to the skills learned on the job; 16% stated that not enough skills were taught to fulfil the trade requirements; 11% lamented inadequate or limited equipment; and 8% complained of insufficient hands-on classroom work. Out-dated equipment, field work unrelated to the trade, and excessive classroom training hours were also criticized. Second, financial issues were a

Drop-out rates by province*, 1986 and 1987

Except for Saskatchewan and Newfoundland, drop-out rates tended to rise as one moved from west to east.



Source: National Apprenticeship Survey, 1989/90

* Apprentices trained in Quebec were not covered in this survey (see The National Apprenticeship Survey).

problem: many apprentices complained of lack of money and inadequate training allowances. Third, some of the drop-outs stated that they had acquired enough training to get a good job. Finally, about 6% quit simply because they no longer liked the trade selected.

Labour market experience after training

Did failure to complete an apprenticeship program mean a complete break away from the trade? What were the economic consequences of dropping out in terms of employment and earnings? Specifically, how did program graduates and drop-outs fare in the period immediately following their training (that is, during the first 12 months) and in the medium term (two to three years later)?

In reading what follows, it is important to remember that the period from 1986 to early 1990 coincided with the high points of the current business cycle. The economy was strong – the period encompassed the fourth to the seventh years of continuous economic growth – and job opportunities were good. Quite different post-training labour market successes might have been obtained for graduates and drop-outs if the period studied had been one of stagnant or declining employment.

Short term

About 96% of graduates worked in the trades in which they apprenticed during the 12 months immediately following graduation. About four-fifths returned to their last employers. Most of them obtained employment for the entire year, working 11.2 months on average.

In contrast, only half of drop-outs worked in their apprenticeship trades and only one-third returned to former employers. They also held their jobs for a much shorter time: 8.5 months on average. One-third of

Table 2

Attachment to, employability in, and earnings in apprenticeship trade (first 12 months after leaving program)

	Graduates	Drop-outs
Employment in apprenticeship trade (%)	96	52
Average months of employment in trade during period	11.2	8.5
Working as journeymen in trade (%)	85	25
Receiving journeyman's rate of pay (%)	81	77

Source: *National Apprenticeship Survey, 1989/90*

drop-outs found employment in other occupations and another 5% returned to school.

The survey does not provide a direct measure of earnings during this period. But it does reveal that 85% of graduates employed in their apprenticeship trades worked as journeymen and that most received the journeyman's rate of pay. In contrast, only 25% of drop-outs employed in their apprenticeship trades worked as journeymen.

Medium term

Two to three years after leaving the apprenticeship programs, perhaps the biggest difference between completers and drop-outs lay in the degree of attachment to the apprenticeship trades. The number of graduates working in their apprenticeship trades had registered a moderate decline: 88% were still in the same trades. For the drop-outs, however, the decline was much steeper: only 31% remained in their apprenticeship occupations.

The employment status of program graduates at the time of the survey – that is, two to three years after leaving the apprenticeship programs – was also slightly

Post-training attachment to apprenticeship trade

Program graduates tended to stay in the apprenticeship occupation, but the attachment of drop-outs weakened considerably over time.



Source: National Apprenticeship Survey, 1989/90

better than that for drop-outs. And the same can be said about the overall employability of the two groups during the 12 months immediately prior to the interview. Approximately 90% of program graduates reported being employed at the time of the survey. In fact, 97% indicated that they had worked at some time during the preceding 12 months, registering 48 weeks of employment on average during that period. In comparison, 82% of drop-outs were employed at the time of the survey. About 96% had worked during the preceding year. And on average, they had worked 45 weeks.

The average hourly earnings of program completers were also better than those for drop-outs, but not by much

considering that graduation in many apprenticeship programs required several years of training (see *Canada's apprenticeship programs*). For example, the average hourly rate of pay in the most recent job in the apprenticeship trade was \$15.78 for graduates compared with \$13.50 for drop-outs. For the most recent job outside the apprenticeship trade, the gap was a bit narrower, at \$13.30 compared with \$12.13.

The earnings differentials varied considerably from trade to trade. For those occupations where a tradesperson's certification is generally a requirement (such as painters and decorators, sheet metal workers, and motor vehicle mechanics), the graduates' hourly pay advantage was substantial, about one-quarter or more higher. But in those trades where certification is usually voluntary (bricklaying, for example), drop-outs earned up to 16% more than graduates.

One of the curious but interesting findings from the survey relates to class-of-worker status of former program participants still attached to their apprenticeship trade. Drop-outs working in their apprenticeship occupation were more likely to be employers than program graduates. At the time of the interview, 15% of the drop-outs compared with 10% of graduates counted themselves as self-employed. It could be that while they were unable to complete their own apprenticeship program requirements, drop-outs (more so than graduates) knew enough about the technical aspects and economic potential of their trades to feel more comfortable starting their own businesses and hiring qualified people to work for them. Also, it is conceivable that a high proportion of drop-outs could not find anyone to hire them and were thus forced into self-employment (with or without paid help).

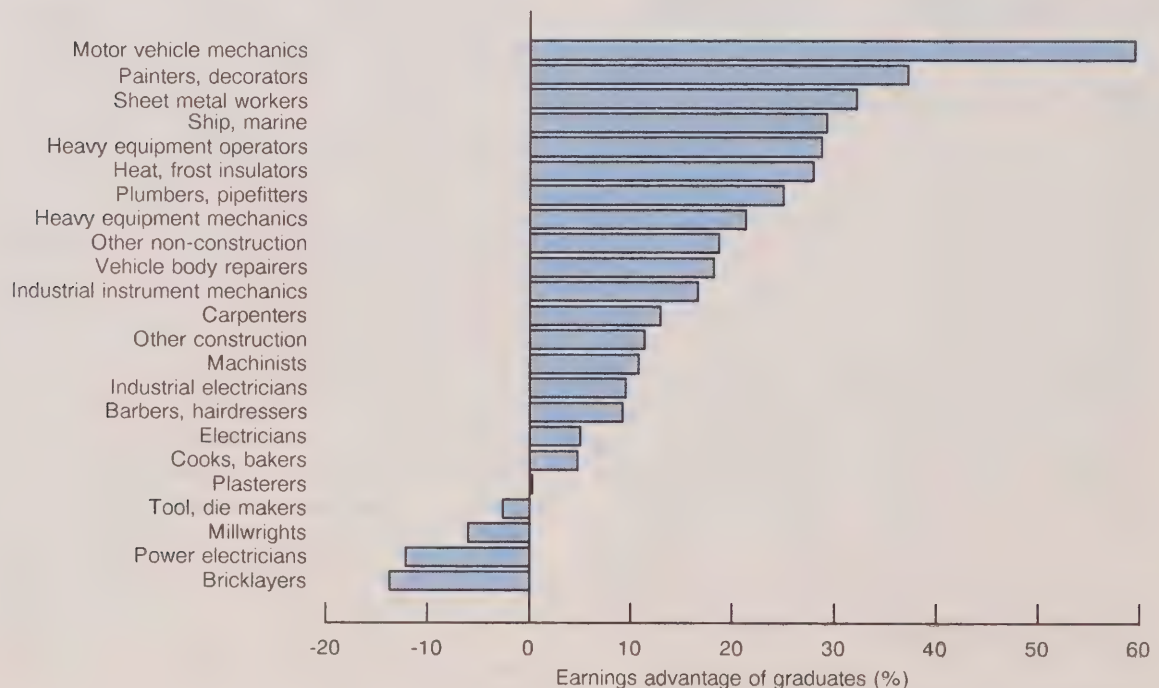
Table 3
Attachment to trade, employability and earnings 2-3 years after leaving program

		Graduates	Drop-outs
Attachment to apprenticeship trade			
Participants reporting employment in trade during last 12 months	(%)	88	31
Average employment in trade during last 12 months		47 weeks	43 weeks
Overall employment experience (inside and outside trade)			
Employed at time of survey	(%)	90	82
Employed sometime during last 12 months	(%)	97	96
Overall average employment experience during last 12 months		48 weeks	45 weeks
Earnings (average hourly wage in last job)			
Employed in apprenticeship trade	(\$)	15.78	13.50
Employed outside apprenticeship trade	(\$)	13.30	12.13

Source: National Apprenticeship Survey, 1989/90

Earnings advantage of apprentices 2-3 years after leaving program

In occupations where a tradesperson's qualification certificate was generally required, graduates earned considerably more than drop-outs. Where there was no such requirement, the reverse was true.



Source: National Apprenticeship Survey, 1989/90

Table 4
Drop-out rates and post-training attachment to trade of apprentices

Trade	All participants leaving programs in 1986 and 1987	Drop-out rates	Proportion working in trade after leaving program			
			First 12 months		2-3 years after	
			Graduates	Drop-outs	Graduates	Drop-outs
			%			
Total	49,620	40.6	96	52	88	31
Boilermakers	210	10.3	99	25	98	-
Bricklayers, cladders	530	61.2	98	50	95	29
Carpenters	4,620	49.6	98	78	92	66
Electricians, construction						
electricians	5,160	31.1	96	44	90	26
Heat and frost insulators	340	50.2	95	35	86	19
Ironworkers	150	8.7	95	73	88	-
Millwrights, industrial						
mechanics	1,610	24.4	95	60	92	40
Painters, decorators	370	55.9	95	53	91	40
Plasterers, lathers, drywall finishers	180	55.4	96	59	84	31
Sheet metal workers	1,270	38.1	95	53	85	34
Plumbers, pipefitters, gasfitters, steamfitters	3,360	38.9	94	59	90	18
Heavy equipment operators, crane operators	190	24.6	98	52	76	52
Power electricians, construction linemen	160	53.9	100	19	96	13
Other construction tradesmen	1,450	50.4	97	42	92	25
Motor vehicle mechanics	8,230	42.9	97	37	93	18
Truck and heavy duty equipment mechanics	2,460	32.9	97	40	86	13
Vehicle body repairers and painters	2,430	49.2	97	56	85	25
Machinists	1,660	48.3	98	48	88	34
Industrial electricians	150	26.7	78	8	74	4
Tool and die makers, patternmakers, mould-makers	1,080	45.1	98	48	96	29
Industrial instrument mechanics	440	36.7	95	27	98	24
Ship and marine tradesmen	310	48.4	97	56	90	36
Cooks, bakers	2,800	53.1	98	73	90	42
Barbers, hairdressers, beauticians	5,200	27.0	95	42	69	19
All other non-construction tradesmen	5,270	43.8	96	55	93	38

Source: National Apprenticeship Survey, 1989/90

Table 5
Employability and earnings 2-3 years after leaving program

Trade	Average weeks worked in past year		Earnings*			
			Employed inside trade		Employed outside trade	
	Graduates	Drop-outs	Graduates	Drop-outs	Graduates	Drop-outs
	Weeks		\$			
Total	48	45	15.78	13.50	13.30	12.13
Boilermakers	42	42	20.72	—	15.89	16.08
Bricklayers, cladders	43	46	17.70	20.54	13.83	10.10
Carpenters	45	47	15.37	13.62	12.00	10.48
Electricians, construction electricians	48	48	18.48	17.61	20.15	11.61
Heat and frost insulators	43	43	19.14	14.97	13.01	12.36
Ironworkers	41	52	20.70	—	14.46	12.93
Millwrights, industrial mechanics	48	42	18.77	19.98	16.78	12.96
Painters, decorators	46	44	17.77	12.96	13.21	10.64
Plasterers, lathers, drywall finishers	48	44	20.85	20.80	13.40	13.57
Sheet metal workers	48	48	18.69	14.16	13.22	16.75
Plumbers, pipefitters, gasfitters, steamfitters	49	41	18.32	14.65	15.09	13.45
Heavy equipment operators, crane operators	47	43	20.05	15.57	16.57	16.13
Power electricians, construction linemen	51	49	19.61	22.28	18.34	15.68
Other construction tradesmen	50	46	19.43	17.44	15.55	11.73
Motor vehicle mechanics	51	45	15.44	9.68	13.16	12.62
Truck and heavy duty equipment mechanics	49	45	15.87	13.07	16.28	14.31
Vehicle body repairers and painters	48	45	14.45	12.24	13.35	12.51
Machinists	50	46	15.83	14.28	13.42	10.73
Industrial electricians	49	52	15.94	14.55	10.15	6.49
Tool and die makers, patternmakers, mould makers	48	47	17.27	17.74	17.42	13.90
Industrial instrument mechanics	51	36	19.84	17.01	19.39	17.90
Ship and marine tradesmen	47	47	13.56	10.49	15.27	12.89
Cooks, bakers	48	44	10.80	10.31	10.88	9.75
Barbers, hairdressers, beauticians	46	45	7.94	7.27	8.89	8.77
All other non-construction tradesmen	49	43	16.63	14.00	12.35	12.77

Source: National Apprenticeship Survey, 1989/90

* Average hourly wage in most recent job.

Summary and conclusion

A surprisingly high proportion of Canada's apprentices do not complete their programs. The reasons are many and diverse. Most program graduates stay in their chosen apprenticeship occupation, but the proportion of drop-outs remaining in their apprenticeship trade gets smaller over time. However, whether drop-outs stay in their apprenticeship occupation or not, their

overall employability (employment experiences) and hourly wages are not substantially inferior to those of program completers. The economic costs of dropping out do not appear to be overly high in the short and medium term. The description of Ontario's apprenticeship program by the Premier's Council as an "ailing ... system ... in desperate need of reform"² can aptly be extended to most, if not all, of the provincial programs. □

Notes

¹ In comparison, in West Germany's highly regarded apprenticeship system, the average age of an apprentice is 16. The difference in age is rooted in the institutional practices followed in the two countries. In West Germany, apprenticeship is part of secondary school education; in Canada, it is usually subsequent to secondary schooling.

² See Premier's Council, *People and skills in the new global economy*, p. 120.

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Gail Cook Johnson speaks out on human resource issues

Interview by Doreen Duchesne

Gail Cook Johnson, Ph.D., is a senior partner of REACON Management Inc., a human resource consulting firm in Toronto. Dr. Johnson's expertise lies in the areas of organizational assessment and diagnosis through the use of employee surveys. She also advises businesses on their human resource and organization development needs.

Dr. Johnson began her career as a labour relations negotiator while teaching economics and industrial relations at the University of Toronto. She subsequently held positions with the C.D. Howe Institute and Decima Research Ltd. Prior to founding REACON in 1988, Dr. Johnson was the Director of Organization Effectiveness Research at Hay Management Consultants.

She obtained her doctorate in Organizational Development and Industrial Relations from the Sloan School of Management at the Massachusetts Institute



Photo: François Duhaime

of Technology. She has authored two books and several articles and is currently a member of Statistics Canada's Advisory Committee on Labour Statistics.

Q. Dr. Johnson, let's begin the interview with a general question. What do you see as the central labour issues facing Canada today? For each one, where do you think Statistics Canada's information and understanding are weakest?

Doreen Duchesne is with the Labour and Household Surveys Analysis Division. She can be reached at (613) 951-6893.

A. There are several issues that are emerging; they're already here. If you look at immigration statistics, a significant percentage of people living in our cities are of neither British nor French origin. This raises two kinds of problems. One is language, that is, the inability to speak either English or French. The other is what I call "vocabulary". Even when people say the same word, they often mean different things. This confusion is brought into our work-

places and it can lead to perplexing situations simply because people have not understood each other.

To make things worse, one of the reasons Stats Can has great problems collecting establishment data is because the vocabulary from one establishment to another, independent of the nationalities of people in them, is not the same. Every organization will talk about communication, leadership, responsibility and delegation. They all use these words but mean different things by them. So the establishment statistics of Stats Can tend to be weak.

Problem number two is Canadian competitiveness, not just vis-à-vis the United States but globally. What kind of information do we need to be on top of that? I think we have to be able to understand our relative costs. We are a high-wage country, particularly when our dollar goes up. This means that labour costs become vitally important. What we could do is become much more productive than other countries. Then it would matter less what our compensation costs were. But we haven't been able to do that. And when I look at the aging of our population, I'm a little pessimistic that we will be able to do that in the future unless we really invest in training and development and make sure we work a whole lot smarter than our neighbours in the U.S. and elsewhere. So labour costs will probably continue to be important from a competitive point of view, which means Stats Can has got to lick the problems associated with doing establishment surveys.

Issue number three: I think we have a real problem understanding the service industries. We have a fair handle on what productive capacity means in manufacturing, but we don't understand what productive capacity means in the service industries. Traditional service industries teach a variety of people skills, as opposed to technical skills, and we're a long way from getting a grip on them. How can Stats Can

... Americans train and develop their people and make them feel as though they're using all their skills to a far greater extent than Canadians do.

help on that? Once again, there's an establishment survey problem to deal with first.

Problem number four is the increasing need for family care and better work arrangements. We see lost time going up. We also see an aging of the population and a low population growth that suggests labour force shortages in the future. I don't think that technological change is going to have a dramatic impact on being able to reduce the labour supply needed in the service industry, which is where employment growth has tended to be. That means employers are going to have to be more responsive to different work arrangement needs, and the more they know about them, the better. Stats Can is in a good position to provide that information because of its household surveys, which are wonderful. I think they're the best in the world.

Q. I'd like to discuss these issues in more detail. To start, I have a few questions on training and development. The 1989 report, Adjusting to Win, prepared by the Advisory Council on Adjustment, "identifies improvements in basic education and training, as well as lifelong re-education and retraining, as among the most critical steps Canada must take to enhance its international competitiveness." ¹ Would you agree or disagree?

A. I absolutely agree. I think education and training and development are keys to Canada's competitiveness. There aren't

many differences between American and Canadian organizations, but the key one is that Americans train and develop their people and make them feel as though they're using all their skills to a far greater extent than Canadians do. We do a very good job on rigorous one-to-one supervision. We have much safer workplaces. We have more rigorous control procedures in place. But we don't take risks with people. Why don't we? Because we tend to invest in the things that control people as opposed to the things that develop people.

This problem is compounded by the aging of the work force. Our baby boomers now are at their most productive age. Thirty-five year-olds like to bounce out of bed and do things for twelve hours a day. At some point, though, they're going to reach their mid-life crisis. Some of them are already there. They're not going to want to work the same way; they're going to have to work smarter and not harder. And because we have a declining population, there aren't the people to replace them, which translates into more education and training for those people who are working.

Q. *Who do you think should shoulder the increasing costs of education and training programs? The taxpayer through government grants, the businesses who need highly skilled workers, or those individuals who want an education?*

A. I think this really comes down to the old labour economists' argument about general versus specific training. I believe that if industry really needs specific skills it will do the training. In this case, government and the taxpayer should not subsidize it. Government, historically, has shown better performance when it has provided general skills than when it's been trying to do specific skill training. And if our schools produce people who are literate and numerate and who all speak the same

vocabulary, then an employer is in a better position to do specific skill training. And can probably do it more cost effectively.

Q. *A great deal of money is spent by employers on training. According to the Human Resource Training and Development Survey, the private sector spent almost \$1.4 billion to train its employees from November 1986 to October 1987.² Have you seen evidence of this?*

A. Those dollar figures are misleading because a lot of training is on-the-job training. There's nothing wrong with that. It can be one of the most effective ways to train people, if it's done thoughtfully and methodically. But it really doesn't show up in the figures; and if people give you figures, they're guestimates.

Apart from that, I know that some firms make some major commitments to training and development. And by that I mean executive, management and personal skills development, as well as training for specific technical skills. They're doing it because they're in the process of radically changing the way they do business.

Q. *What costs do you think employers should include when doing a cost-benefit analysis on training? Obviously, they would include course fees and materials, overhead costs, capital expenditures and the trainee's pay. What else?*

A. If you're a manufacturing concern, you've got to also include items like the cost of formal and on-the-job training, increases in accidents and time lost, and increases in scrap. Quality statistics can also be used to measure costs. I don't know how you'd really measure them in the service industry. That's a more difficult problem, although the service industry does tend to keep good track of things like service complaints. That twigs them as to whether their people need more training.

Q. *The Human Resource Training and Development Survey's question on human resource planning was poorly answered. The impression it left was that there wasn't much planning going on. Do you agree or disagree?*

A. I think there's more thoughtfulness going on than that survey would suggest. Large firms spend a lot of time, particularly in a changing environment, arguing about their person-hour needs. But they have been spectacularly poor at forecasting people needs because people don't do what machines or money do. They don't go where you tell them to. So you can forecast in 1991 for 1995 to your heart's content and they'll surprise you every time.

If you're a small firm or even a medium-sized firm, your priority is getting those clients served or getting the product out the door. You're probably scrambling for good people and you'll take them whenever your budget can bear it. The dilemma is so boxed by current events that it's hard to put it on paper.

Q. *Our experience with this survey has shown that such surveys are expensive and they impose a considerable burden on respondents. What data does the private sector already have on employer-sponsored training?*

A. The Conference Board did a survey on the training practices and expenditures of medium- to large-sized organizations, which mainly focused on management and executive development.³ That is the only one I know of. Why is that? I think it's because there isn't a vocabulary about training and development that's common among firms. There is a lot of "OJT" or on-the-job-training that goes on. But it's not consistent. The only exception is apprenticeship training in the trades where there are apprenticeship requirements which merge classroom instruction with shop floor experience. But

other than that, people tend to do their own thing. They may buy training packages but even then they usually customize them.

... there isn't a vocabulary about training and development that's common among firms.

Q. *Statistics Canada has also had problems dealing with "vocabulary" related to human resources. Is it possible to standardize concepts, for example, to clearly define what constitutes training?*

A. I can see why Statistics Canada has a real problem. A manufacturing firm, for example, can operate as a "machine bureaucracy". It puts a product out through control. And it controls through systems and processes that can be standardized. In a "professional bureaucracy", such as a law or accounting firm, people skills are standardized. When training and development is talked about, what's being added to people in a professional bureaucracy is very different from what's being added to people in a machine bureaucracy.

Then you've got hospitals and educational institutions, which are mixed. They can completely confuse the statistician because they're not pure anything; they've got a machine bureaucracy tied with a professional bureaucracy. And there are the firms that I call the "ad hocracies" because they work on a project basis and whatever it takes to get the job done, they do. When they talk about training and development, they mean a whole different kettle of fish.

So once you've mixed all this brew, how do you ask the question? I think you really have to start to standardize concepts at a micro or industry level. Then you begin to find consistencies.

Q. *You've already mentioned some significant differences in human resource management issues between the service sector and the manufacturing sector. Are there others?*

A. There's a number of them. First of all, the service industry needs a heavy dose of people skills. Its employees are front-line troops. They have a lot of power and control over the bottom-line business. For example, the person at the front desk in a hotel has all kinds of power. But there's arguably more of a limit to what an assembly line worker can do, in an immediate sense, for the business. Besides that, an assembly line worker's job is often more routinized. In the service industry, the work is not routine because its employees are dealing with people and people are unpredictable. So they have to be trained in quite a different way. You don't train them for that which usually happens; you train them for that which may happen, and how to react in the one-off situations. It's a different way of having to think about how to skill your work force. And with changes in manufacturing technology, many manufacturing concerns are realizing that their training needs to be different too.

Q. *Information provided recently from the Survey of Literacy Skills Used in Daily Activities⁴ indicates that up to 38% of working-age Canadians experience difficulties in dealing with printed material. Have your clients found impaired literacy to be an impediment to effective training?*

A. Oh gosh yes! In Toronto, for example, I know of an organization where, if you wanted to name any language, someone in that organization would speak it. It's a Tower of Babel. But the problem is more than a lack of literacy skills; and it's more than not being able to read the form. It's also a vocabulary issue. Now that we all know the same words in English, what do we mean

by them? Nine times out of ten you're going to get different answers.

I had an experience not too long ago with a company – primarily British management – which said "We've got a real problem. We're hiring Oriental scientists and I think they may need to learn English." So I went in and talked to these folks. They happened to be born in Canada and spoke English better than I do. But they meant different things by different words. It had nothing to do with written or verbal communication in the English language. It had a lot to do with a British organization paradigm coming into conflict with what a younger Canadian thinks an organization should do about things like decision making and consensus.

Apart from that, when organizations offer English as a second language, it often isn't taken advantage of because it's demeaning. People feel embarrassed to admit they don't speak or read English, or French. Literacy training should be offered as an opportunity for career development. It should not be treated as one more benefit that an employer is giving an employee.

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Q. *What do you mean by "organization paradigm"?*

A. I mean the way people put an organization together to work. What are the assumptions made about the distribution of power within organizations? How do they reward performance? Do they control through machines or through people? How do they get people to know what's expected of them? How big or small are the jobs?

Every single one of those decisions is based on different philosophies and assumptions. And there are reasons for that. If you're making nails, it might be best to use a relatively straightforward process, from a production point of view; so you should probably standardize tasks to a great degree. You will have morale problems, but it's not necessarily a bad production strategy. One might argue it's a bad human strategy. If you're trying to produce a rocket to go to the moon, then a whole number of uncertainties are raised that are not raised in the making of nails. So you have to change your paradigm and your assumptions about how you're going to reward and deploy people. It doesn't work otherwise.

Q. In addition to the difficulties immigrants have in understanding one of our two official languages, literacy problems are also common among young people graduating from high school. Moreover, one in three high school students doesn't even graduate. How significant a problem is this?

A. I think it's a major social issue, but these people rarely make it into our labour force, because they have a number of disadvantages. If they've dropped out of a Canadian educational institution there are probably all kinds of family and social issues that have caused them to do that. And this makes them, from an employer's point of view, a poor employment risk, in addition to being illiterate. I find employers talking about immigration policy and what it might mean to them, and employers talking about literacy skills for new Canadians and what it might mean to them. I hear them say, "University graduates aren't as literate as they used to be." But I have yet to have an employer say to me, "The only people I can hire are Canadian high school drop-outs and what do I do with them?" So it's not a workplace issue with many firms because they bypass it completely. Now if labour

becomes really short I'm sure it will become a number one issue, but so far new immigrants have been able to fill those employment needs.

Q. In your experience, do employers accept formal educational attainment at face value in deciding whom to hire, or do they find it necessary to conduct their own assessments of knowledge and intellectual ability?

A. That's all over the map. If you're applying for a job as a researcher, they'll ask you to submit something you've written yourself because they've learned to distrust that a BA means you can write coherently. In other kinds of employment tests, they're often looking for personal attributes, not technical skills. For that reason, they are often very controversial. If you're applying to a service organization, they're looking for how service-oriented you are. That isn't an educational requirement; that's a personality trait. As for new Canadians, one of the things employers are very poor at understanding is the value of a foreign degree. Employers often discount the education that's really there, unless they recognize the institution.

Q. I have a couple of general questions related to human resource management and then on to compensation and fringe benefits. North Americans frequently look to Japan for possible solutions to various problems. Can you identify some Japanese practices in the area of human resource management that have been or might be successfully implemented by North American employers?

A. We have all kinds of trendy things coming from the Japanese, like quality circles and participative management.⁵ "Quality circles" are problem-solving groups with employees at the grass roots. When they first came to North America, they rarely worked. And the reason is that when

you asked Japanese people in a Japanese organization, "What do you think our problems are and how do you think we should solve them?" – they understood that for exactly what it was. When you asked a group of North American baby boomers the same question, they thought you were giving them an equal vote in decision making. So all hell broke loose. It's taken North American organizations quite a while to work out the vocabulary in a Canadian context. It all has to be Canadianized or it doesn't work. We are not Japanese. If you took a Canadian custom, performance management, for example, and put it in a Japanese organization, it wouldn't work either. Because the vocabulary is different.

Employee attitude statistics tell us that employees in the last decade have become more dissatisfied.

Q. Following the recession in the early 1980s, our data suggest that employers have changed the way in which firms manage the labour component of their production inputs. There's been a greater mix of part-time employment, an increase in the contracting out of services and, perhaps, a greater tendency for firms to lay off staff rather than rely on reducing hours as a means of balancing production with sales. Do you see this as a "hardening" of employer attitudes towards their work force?

A. From an employer point of view, the recession really knocked the wind out of everyone. Before that, no one really thought too much about how they got to the bottom line – they just did it. There were a lot of excesses. The recession really provoked

people into thinking about their organizations. They often went overboard when reorganizing to make themselves recession proof, and this created dissatisfaction. People wondered why they should commit themselves to an employer who now wanted so much more. Change is difficult. People have problems with change because they don't know what it means to them. And organizations have had trouble telling people what change means because they didn't know themselves. So we have had a decline in satisfaction, which has been partly employer induced. But I think we're coming around and we're going to end up in a better place. We've learned a lot.

Q. This employee dissatisfaction you've mentioned, can you tell me more about it?

A. Employee attitude statistics tell us that employees in the last decade have become more dissatisfied. This observation comes from doing employee opinion surveys in hundreds of organizations and being able to track that data over a decade. What are they dissatisfied with? A combination of things. One is that people perceive their job security to have declined. Their level of uncertainty has increased about what employers expect from them. And when people are highly uncertain, they tend to be more dissatisfied simply because they don't know if they're doing well any more.

Apart from that, organizations have downsized. They are flatter. Jobs are broader. Career opportunity is perceived to have declined because career paths and opportunities have changed. It also comes down to, "Employer, you're putting more demands on me, yet I have more demands from home and you're not prepared to accommodate." The quid pro quo is all one way. But I think that's beginning to change. I think we'll start to see satisfaction increasing, unless there's another "major" recession.

Q. *For some time now, particularly among salaried workers and those working for large firms, fringe benefits have been increasing as a proportion of total employee compensation. Included in fringe benefits are the more obvious costs such as employer contributions to the CPP/QPP, UI,⁶ pension plans and medical plans, and the less obvious ones such as subsidized day care and fitness facilities. Is this type of compensation going to increase in the future?*

A. I think so, mainly because employers will be facing a short labour supply, which means they are going to have to become more attractive to women and the older worker. I don't think that will necessarily mean day care or fitness centres in every workplace; it may mean day care or fitness subsidies. Those kinds of benefits might actually be offered as part of an employee menu,⁷ although this way of compensating employees in Canada has been difficult because we don't have the economies of scale that the American workplace has. For example, I have clients in Canada whose job-sites employ a thousand people. The comparable ones in the United States employ forty-five thousand people. But I think employers will respond increasingly to the sort of home and work stresses that are emerging.

It would be interesting to have accurate statistics about how much of that currently goes on. Most of the information we have is very anecdotal and it's often biased to large employers who can afford to do that, or do it more visibly. That's an area where I think Stats Can could play a role on an occasional basis.

Q. *In Canada today, there are millions of working couples with young children. Almost all of these couples must arrange to have their children taken care of by others for at least some of the time they are working. This implies a tremendous demand for workplace day care or day care subsidies. In your*

opinion, is day care going to become the single most important fringe benefit in the future?

A. This issue is going to come up more than we ever thought, partly because families are becoming smaller. And they're becoming more geographically dispersed. This means that people are almost out of resources. The first women to enter the labour market and stay in had all kinds of options to help with child care. They had their mother, their sister, their neighbour. They had other children who grew up into babysitting siblings. These options have begun to disappear. Now the solution to this problem could be day care subsidies, actual day care in the workplace, or working at home. It's hard to predict. It's undoubtedly an issue – and it will continue to be.

Q. *Given that total labour costs, which include fringe benefits as well as wages and salaries, make up the largest cost of production for many employers, one would think that employers would have detailed labour cost information for their own use. However, employers have great difficulty in reporting information beyond basic wages and salaries. Why is that?*

A. In the service industries, human resource costs are significant. They're generally 75 to 80 percent of the cost of doing business. But, in a high percentage of high-tech manufacturing situations, labour costs are just simply not as important as other costs. For example, when it costs X million dollars a day to drill a hole, the fact that it's costing an extra thousand to hire a consultant to look at that hole being drilled ceases to be all that important! In large businesses I think they have, in a fashion, a grip on what it costs them but it's not all in one place. Wages and salaries are taken care of in the human resource department, but God knows where the pension plan is. In the

case of multi-establishment companies, location X probably takes care of wages and salaries but the head office takes care of everything else. Training and development, and all those other costs that we should take into account, are also hard for them to put together because the decision-maker on these doesn't view the business in the same way an economist looks at the viability of this business. As for small firms – they just don't have time to collect these statistics because they're running so fast.

An incentive package that really does motivate people at the grass roots has to be about things that people feel they actually can control.

Q. Performance pay has been a part of executive compensation packages for many years. We understand that proposals to extend performance pay to many other workers are gaining ground. Do you expect that the proportion of workers eligible for performance pay will continue to increase?

A. An incentive package that really does motivate people at the grass roots has to be clear. It has to be about things that people feel they actually can control. If a plan is based on profit-sharing only, it's difficult for people to be motivated by that because they know profit is made up of so many things over which they have no control. If it's based on the reduction of scrap on the floor or other things, then maybe you're talking. So these plans are very difficult things to put into place. They often need an attitude change. All these things tell me that maybe such plans won't become prevalent despite several good reasons for trying to do it. There's a lot of talk about it and this is where Stats Can

could help us understand whether, indeed, there is a bona fide trend.

Q. What problems would you anticipate for Statistics Canada in including performance pay in its existing measures of compensation?

A. No plan that I've ever seen is the same as another. It's never the same in terms of whom it covers, whether it's long term or short term, what it's based on, how it's paid out, whether it's in lieu of a COLA clause, meaning it's not a wage increase. All those things would be important to know if these data were collected. But you'd have to be sure that the private sector felt these data were important to them. Or that you had a public policy concern. Because, in the compensation area, the private sector will go out and find their own comparative data when required. They want to be sure they are paying enough to attract and retain the people they need; but they also don't want to pay more than they have to. So they're very careful to find out what it is they need to know. Now that's not necessarily what Stats Can needs to know.

Q. What other incentives can employers offer to increase the productivity of their workers?

A. The needs that employees have are idiosyncratic to the nature of the workplace and the kind of people they are. For example, I know of an employer with much lower turnover rates than its industry counterparts because it offers training and development that's superior. This employer has a very young work force that isn't all that interested in pensions and security but is really interested in job scope and being able to learn. It's a professional kind of firm. I have another firm that employs relatively unskilled labour, a little bit above the minimum wage. What does it do? The firm has its female employees picked up in a bus every morning. This gets them to work and it

gets them home again in time for their kids coming home from school. Yet I would not recommend that as a general solution to the Canadian manpower dilemma. I think you have to look at the kind of work force you want to attract and retain in order to answer that question.

Q. *My last questions deal with Statistics Canada's activities in the areas of data collection and analysis. Statistics Canada collects vast amounts of labour market data every year. Much of it is published and used, but more could be made available. In your perception, is there a market for these undissemminated statistics?*

A. Only if they're analyzed and put in articles with chunky bits that people can grab. They're buried where they are because of the few who want them and try to find them. From my experience, people need to have the picture drawn for them, at least to begin with, before they can appreciate the information that's there.

Q. *With a fixed budget, Statistics Canada must ultimately choose between more analysis and more data collection. Do you have any guidance for the Agency in how it should deal with this trade-off?*

A. You first have to ask yourselves the questions that need to be answered from a public policy point of view. And the ongoing questions from a national accounts point of view. Next, I would always prefer that more analysis be done. There's such a wealth of labour supply information already there that analysis is really where effort should be put in primarily. I think people don't know enough of what's there to make informed decisions about their needs. *Perspectives* is a dynamite initiative because it puts forward things that people can begin to read and understand. And once they have understanding, then maybe they will start digging for themselves. □

Notes

¹ Advisory Council on Adjustment (Canada), *Adjusting to win: report of the Advisory Council on Adjustment*, p. xviii.

² Sponsored by Employment and Immigration Canada, the Human Resource Training and Development Survey was carried out by Statistics Canada from February to August 1988. For more information on this survey, consult the *Human resource training and development survey results, 1987 (1990)* or contact Edith Rechnitzer at (613) 951-9167.

³ The survey of Management and Executive Development Expenditures and Policies was carried out in 1988. At the time of the interview, The Conference Board of Canada was conducting another survey called: Training and Development Practices and Expenditures in Canada. These results are now available in *Training and development practices and expenditures in Canada (1991)*.

⁴ Results from this survey, carried out in October 1989, have been published in an article entitled "Overview of literacy skills in Canada," in *Perspectives on labour and income* (Winter 1990). For more information, contact Gilles Montigny at (613) 951-9731.

⁵ In "participative management", workers provide input for management decision-making.

⁶ These refer to the Canada Pension Plan (CPP), the Quebec Pension Plan (QPP) and Unemployment Insurance (UI).

⁷ This means an employee is allowed to choose a limited number of benefits from a longer list of potential benefits or "employee menu". For example, an employee may be given a choice between subsidized day care and free parking.

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Donna J. Owens

Discretionary income", "unencumbered funds", "fun money", or "spare cash": call it whatever you like, no one ever thinks that they can have enough of it.

Even economists are dissatisfied with the term "discretionary income". But theirs is a conceptual concern: what is discretionary income and how can it be measured? Nevertheless, it is important to know the amount of discretionary income available in the economy, because discretionary income statistics:

- show how personal income taxes and average household expenditures affect the amount of money that Canadians are free to spend or save;
- can successfully target a desirable group of consumers in a competitive marketplace;
- measure how rapidly "extra cash" is growing for Canadians who are well off.

This article proposes a method for identifying people with "discretionary income". It then describes some of their characteristics – who they are, how much money they have and how they spend it.

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What is discretionary income?

Discretionary income is not synonymous with disposable income. Disposable income is usually defined as the amount of income remaining after payment of personal income taxes, while discretionary income is usually defined as total income less personal income taxes, Unemployment Insurance premiums and other compulsory payments, and household spending on "necessities". What remains is "discretionary income" which can be spent or saved as one pleases – on vintage wines, stocks and bonds, vacations.

This kind of calculation would be simple enough in a world inhabited by theorists. In fact, discretionary income is a highly subjective concept and is difficult to define because what some consider a necessity is a luxury for others. For example, a car may be a necessity for a mother with young children living in the suburbs, but a luxury for a single woman living and working downtown. Therefore, "any definition of discretionary income in precise statistical terms will be arbitrary".¹

Little analytical work has been done on discretionary income (DI) but one of the few attempts in recent years was made in a joint study by the U.S. Consumer Research Center, the [U.S.] Conference Board and the U.S. Bureau of the Census. The study avoided defining "necessities" and instead used an income threshold as a measure. It defined DI as "the amount of money which

Coming to terms with the terminology

Spending unit – a group of people living in the same dwelling who depend on a common or pooled income for major expenses, or one financially independent individual living alone. Never-married sons or daughters living with their parents are always considered part of their parents' unit. A spending unit, in most cases, is equivalent to a household, and is generally referred to as such in this study.

Family income before tax – this includes gross income from wages and salaries, net income from self-employment, receipts from military pay and allowances, gross receipts from roomers and boarders, net rentals, family allowances, interest and dividends, all pensions, Worker's Compensation and Unemployment Insurance benefits, social assistance and income supplements, child tax credits and miscellaneous regular income receipts.

Major source of income – the source accounting for the largest share of the total income of a spending unit; for example, wages and salaries, and interest and dividends.

Discretionary income line (DIL) – a set of income cut-offs equal to 1.3 times the average consumption level of households, grouped by their size and their locale. A household with after-tax income above the 30% cut-off for its type is classified as a "DI household" (see *Technical notes*).

Spendable discretionary income (SDI) – the "extra cash" available for consumption or saving, expressed as the actual dollar amount over and above the DIL cut-off for that type of household (see *Technical notes*).

Per capita SDI – the value resulting when the total SDI of a spending unit is divided by the number of persons in that unit, regardless of age.

would permit a family to maintain a living standard comfortably higher than the average for similar families".² To set the threshold, the researchers used a U.S. Department of Labor survey which had concluded that to allow for a relatively comfortable standard of living, a household's budget had to be about 30% higher than the average consumption expenditure for similar households.

This study adopts the U.S. definition that a household has discretionary income if its after-tax income is at least 30% higher than the average family expenditures on

goods and services for that type of household. (Disposable income and after-tax income are synonymous; this study will use the term after-tax income.) For an explanation of the limitations imposed by the DI measurement, see *Technical notes*.

What can be spent: Aggregate spendable discretionary income

In 1986, the total amount of spendable discretionary income (SDI) available in the economy was estimated to be \$28.9 billion. This total was available to one-quarter of the households in Canada. With pre-tax incomes averaging more than \$63,000, these 2.1 million families each enjoyed an average of just over \$13,500 "extra cash". (Table 1 includes the figures for the population that would have had DI based on income cut-offs of 20%, 30% and 40%. This demonstrates how the choice of cut-off can change our perception of the issue. For the remainder of this study, the cut-off is 30%.)

Who had money to spend: Profile of the DI household

For the most part, DI families have much higher incomes than the average for all households. This is especially true as household size and attendant expenditures rise: the DIL threshold moves beyond the reach of the average household. But discretionary income is not necessarily linked to income that is high compared with the Canadian average. For example, in 1986, almost 40% of all households had total annual incomes of less than \$25,000, yet 2.4% of them had discretionary income. This arises from the methodology used to select households with DI.

Impact of household life cycle

Canadian families headed by a person aged 25 to 29 had the lowest average household SDI. The SDI per household then rose

Table 1
Summary income statistics, 1986

Number of all households	8,849,365			
Average before-tax income	\$35,665			
Average after-tax income	\$29,174			
		Discretionary income lines		
		20%	30%	40%
Number of households with discretionary income (estimates)		2,645,472	2,127,369	1,732,644
Proportion of all households with discretionary income	(%)	29.9	24.0	19.6
Average before-tax income	(\$)	59,495	63,269	66,638
Average after-tax income	(\$)	46,897	49,640	52,102
Spendable discretionary income				
Average	(\$)	13,403	13,566	13,597
Per capita	(\$)	4,982	5,070	5,136
Aggregate spendable discretionary income	(\$ billions)	35.5	28.9	23.6

Source: Family Expenditure Survey

steadily and peaked at \$17,472 among those aged 45 to 49, where it remained fairly stable until the head of the household reached retirement age.

Per capita SDI was also low among households headed by young adults (aged 25 to 29), but contrary to the pattern shown by household SDI, it did not rise as quickly. In fact, it did not peak until the household head was over 49, a stage of the family life cycle when income remains high but household size begins to shrink.

Families and individuals

Just over 27% of Canada's 2.1 million DI households consisted of two people. With one-third of available "extra cash", they had the largest share of aggregate SDI. Nevertheless, married couples with children had slightly more household SDI than did couples without children, perhaps reflecting that the childless couples were younger and therefore had less income.

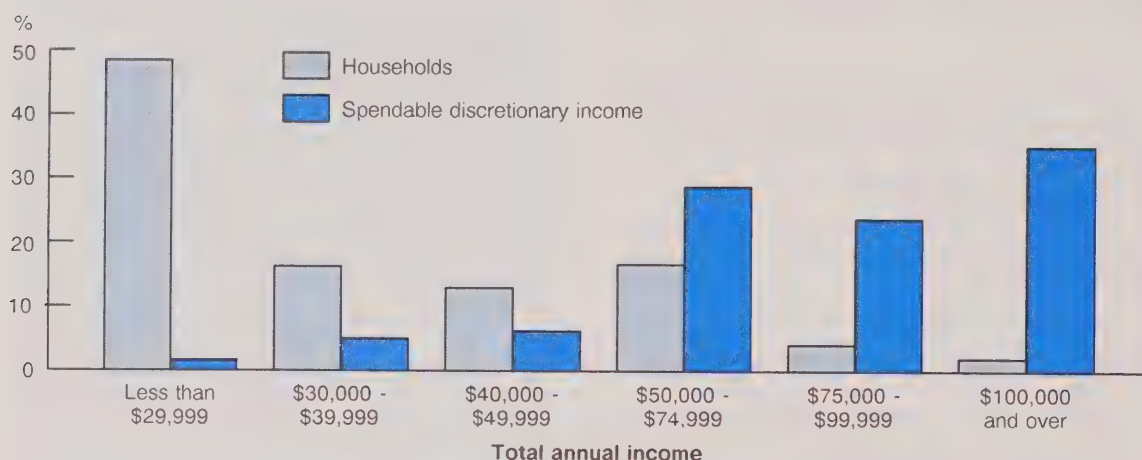
Approximately 24% of the one-person households in Canada had discretionary income. They controlled the smallest percentage (14%) of aggregate spendable discretionary income, but with almost \$8,300, they had the highest per capita SDI. And men had more SDI than women: in 1986, women comprised 60% of the single population but possessed only 40% of SDI. On average, men had \$9,047 in SDI, about 24% more than women.

Dollars and degrees

A 1986 Statistics Canada study of high-income families concluded that a strong positive relationship exists between high education and high income.³ Since higher income produces DI, the evidence should show that the same relationship holds for education and DI. Indeed, approximately 52% of families headed by people with university degrees had SDI. Furthermore, average SDI in DI households headed by university graduates was almost \$20,400, double that of DI households headed by people who had not completed high school.

Distribution of all households and aggregate spendable discretionary income, 1986

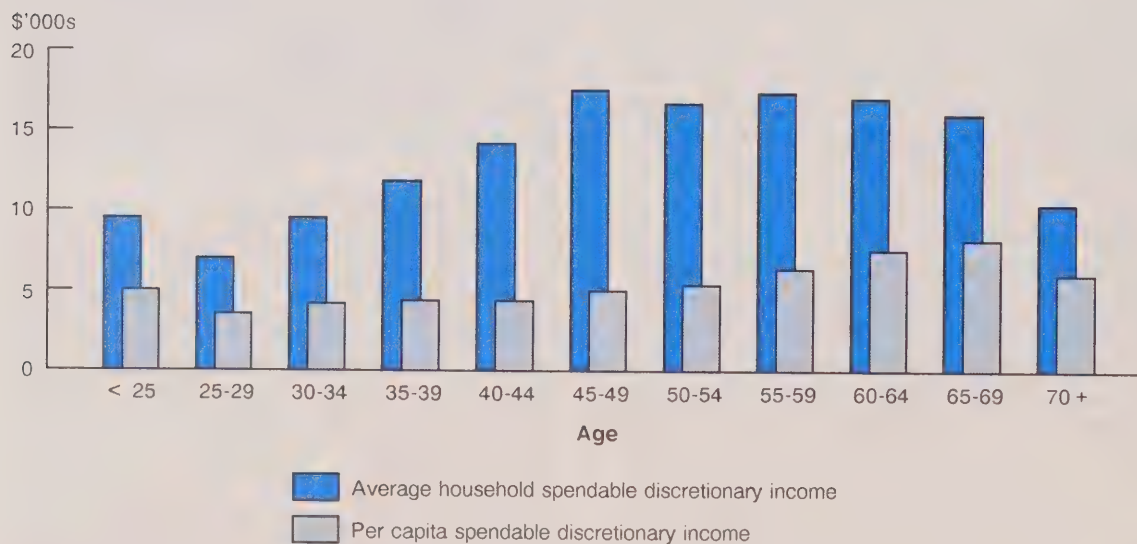
Only 13% of aggregate spendable discretionary income is controlled by the 75% of households that earned less than \$50,000.



Source: Family Expenditure Survey

Spendable discretionary income by age of household head, 1986

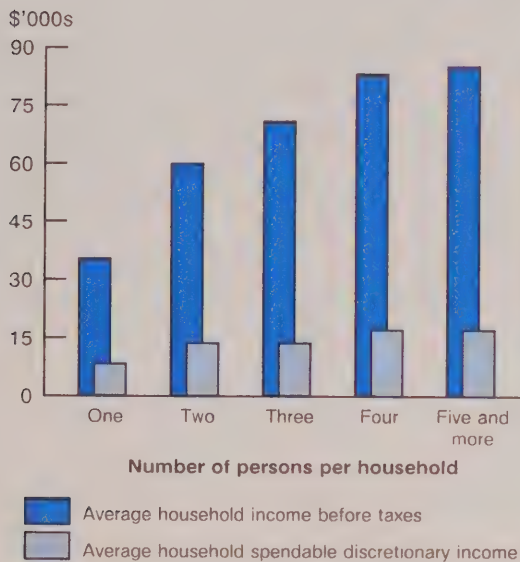
Spendable discretionary income was at its lowest level among households headed by a person aged 25 to 29.



Source: Family Expenditure Survey

Income and spendable discretionary income by size of household with discretionary income, 1986

Spendable discretionary income does not increase proportionately with household income.



Source: Family Expenditure Survey

Types of jobs

Of the 2.1 million households with DI, almost half were headed by a person employed as a professional or manager, a reflection in large part of the relationship between education and DI. They controlled 53% of aggregate SDI and each of them averaged \$16,342 in household SDI. But at \$6,414, per capita SDI was highest among those who were "not working/retired". It may seem unexpected that these non-workers had more DI than the "blue collar" workers, despite "blue collar" DI households having higher before-tax income. This reflects the larger average size of blue-collar households (close to four people), putting them into a group with a higher DIL threshold than the two-person group to which most "not working/retired" households belonged.

Where the money came from

Two-thirds of all DI households reported wages and salaries as their major source of income. Although only 1 in 20 Canadian households gained the majority of their income from self-employment in unincorporated businesses, the highest incidence of DI – 35% – occurred in this small group. At just over \$76,500, the average before-tax income of self-employed households with DI ran \$14,000 higher than that of investment earners with DI; but the SDI of each group was identical at \$21,275 per household. The similarity in SDI despite the dissimilarity in income arises because most investment earners belonged to small households, while the self-employed earners were maintaining larger households.

Number of cash contributors

With 37% of DI households being families in which both spouses worked, it is not surprising that this group controlled 55% of aggregate SDI. However, the average amount of household SDI for those families where only the husband earned a paycheque was over 40% more than for those units where both the husband and wife were employed. Similar results were reported in the U.S. study: its authors noted that this apparent anomaly "is explained by the fact that in the exceptionally high income class, comparatively few wives are employed".⁴

The "no workers" households, although a relatively small portion of the DI population (less than 6%), had the second highest average SDI and the highest per capita SDI. This group had a large amount of extra cash because most "no workers" belonged to the one- or two-person household groups, whose DIL thresholds are comparatively low. "No workers" received the bulk of their incomes from investments and pensions.

Table 2
Discretionary income: A profile, 1986

	Distribution of all households	Incidence of households with DI	Share of aggregate SDI
		%	
Age of household head			
Under 25 years	6.2	12.5	2.3
25-34	23.6	22.9	14.0
35-44	21.9	26.8	23.4
45-54	15.6	35.4	28.9
55-64	14.4	29.2	22.2
65-69	6.8	16.8	5.6
70 and over	11.6	9.8	3.6
Occupation of household head			
Professional/Managerial	22.9	45.7	52.5
Sales/Clerical/Services	20.5	23.5	17.4
Blue-collar workers	26.3	22.6	18.6
Other/Not specified	4.7	17.5	3.8
Not working/Retired	25.6	7.8	7.7
Family composition			
Unattached	23.2	23.9	14.1
Married/No children	20.8	31.8	28.8
Married/Children	39.4	23.1	43.0
Other	16.5	16.7	14.1
Region			
Atlantic	8.2	17.5	5.0
Quebec	26.6	17.4	16.2
Ontario	36.1	29.1	48.7
Manitoba	4.1	18.9	2.6
Saskatchewan	3.9	25.4	3.9
Alberta	9.1	31.6	11.0
British Columbia	11.9	23.6	12.7

Source: Family Expenditure Survey

Region of residence important

Not surprisingly, residents of Ontario – with 36% of Canadian households – controlled almost half of Canada's aggregate SDI. The province also recorded the highest average before-tax income for DI households (\$66,574), and the top household SDI, at \$15,119. However, Alberta families were the most likely to be "in the money": that province claimed the highest incidence of SDI, with 32% of households above the DI threshold.

Not just the province, but the population density of an area also affected the distribution of DI. Over half the discretionary cash in Canada was controlled by households in urban areas with populations over 500,000. This group had an average of \$15,290 in household SDI, whereas the average DI household had \$13,566. The second largest concentration of SDI – almost 16% – was in rural areas, where one-quarter of households enjoyed having an average of \$11,450 in extra cash.

How they spent their money: Expenditures of DI households

Given this portrait of households with discretionary income, what are their spending patterns compared with those of the average household? The first thing to consider is how much income was actually available to spend on both necessities and "discretionary" items, after personal income taxes had been paid.

Personal income taxes accounted for the largest share of everyone's budget. In 1986, those households with discretionary income paid an average of \$13,629 in personal income taxes, or 24% of their total expenditure (21.5% of income). The average household was taxed at 18.5% of its budget

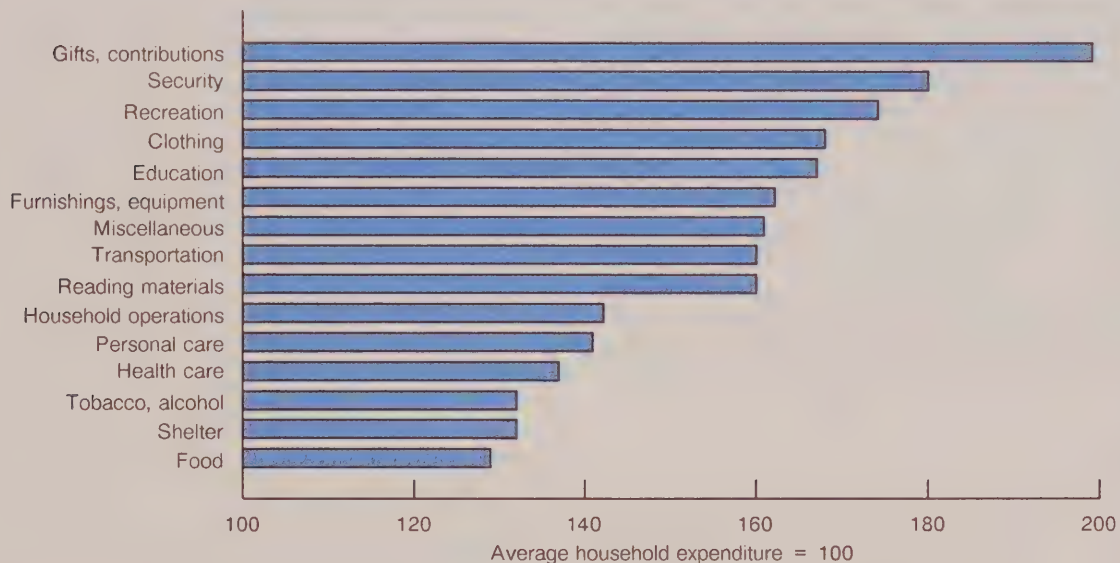
(18.2% of income), which in dollars was actually less than half the amount the DI families paid.

Shelter

Shelter was the greatest post-tax expenditure for all households – the average household spent almost 20% of its budget on shelter while a household with DI spent just over 17%. DI families allocated almost \$800 more to household furnishings and equipment than average families. Similarly, additions and renovations to property attracted almost twice as much spending from DI households (\$1,200) than from average households. DI families also paid double the average on hotels, motels and vacation homes.

Index of expenditures of discretionary income households, 1986

As expected, discretionary income households spent more dollars on everything but proportionally less on "necessities" than the average household.



Source: Family Expenditure Survey

Food

At \$6,500 per year, households with DI spent considerably more on food than the average household, probably because their fondness for eating out consumed one-third of this amount. Nevertheless, in accordance with Engel's Law,⁵ they actually dedicated a smaller portion of their total budgets to food.

Transportation

DI households spent almost as much on transportation as they did on shelter. Their expenditures amounted to an average \$7,440, representing 60% more than those of the average household. A DI household had two motor vehicles, while the average household had one motor vehicle. Discretionary income families also devoted almost twice as many dollars to public transportation, including air travel.

Clothing

Clothing expenditures tend to confirm that DI families are more likely to be adult-only households: they spent \$1,500 more on clothing than the average household, spending a great deal more on women's and men's clothing than on children's.

Recreation

Recreation was an important component of all households' budgets; it was the fifth largest expenditure (excluding taxes) for everyone. DI families spent almost twice as much as other households on items such as recreation vehicles and equipment, home entertainment, movies and travel tours.

Security

Discretionary income is available not just for consumption but also for saving. Life insurance premiums and retirement/pension fund payments (forms of saving) were certainly a favoured expenditure among DI households. At \$2,825, they spent 80% more than the average family on these items. Registered Retirement Savings Plans (RRSPs)

were also popular among DI families: they invested almost three times as much in RRSPs – \$1,863 – as the average household.

Miscellaneous

Personal care and health care did not figure prominently in the discretionary income household budget, although those with extra cash did spend 60% more on private health care plans. Expenditures on education and reading were also dominated by the DI group. "Gifts and contributions" accounted for twice as much spending by DI families than by average households, with almost one-quarter of the \$2,200 they spent donated to charities. And although DI households spent more on tobacco and alcohol than average households, it was alcohol and not tobacco that consumed most of their "vices" budget.

Conclusion

This brief examination of DI households and their expenditure patterns is far from definitive; the concept raises methodological concerns, and the results pose economic questions.

Has the number of households with DI increased or decreased over time, and how much discretionary cash is available to spend? With changes in the economy, how do expenditure habits of DI families change? And given the impact of demographic factors on income and consumption, how will the changing composition of the Canadian population affect the household distribution of SDI in the future?

The concerns raised by the methodology used may never be definitively resolved by statisticians. Like the calculation of low income cut-offs, DI levels are arbitrary, depending entirely upon subjective assessments of "necessities" and "luxuries". Nevertheless, despite all the unanswered questions, it is hoped that this article provides food for thought and a starting point for further analysis. □



PERSPECTIVES

ON LABOUR AND INCOME

Supplement

Spring 1991

Year-end review of labour markets

H I G H L I G H T S

- Employment in 1990 peaked in April, then fell at an increasing rate. It ended the year 1.0% lower than a year before and 1.6% lower than in April.
- Job losses were most severe in goods-producing industries such as manufacturing and construction. Employment in the goods sector fell in every quarter of 1990 for a 5.4% annual decline, leaving employment in goods-producing industries at its lowest level since 1987.
- Employment in service industries edged up 2.3% for the year. However, all gains were realized in the first seven months of the year. Employment was weakest in transportation and in non-essential consumer services.
- Ontario and Quebec were the biggest job losers during 1990, largely because of the concentration of manufacturing jobs in Central Canada. British Columbia was the only province to post a significant increase in jobs in 1990, although employment fell in the fourth quarter.
- Full-time employment declined by 241,000 to its lowest level since December 1988. Part-time employment increased but only because people could not find full-time jobs.
- The help-wanted index plunged 47% from its peak in April 1989 to December 1990.
- After reaching a 10-year low in March (978,000), the number of unemployed swelled to 1.28 million by year-end. Higher unemployment hit all major age-sex groups. The largest increases were for both men and women aged 25 years and older.
- From a low of 7.2% in March, the unemployment rate climbed to 9.3% by the end of the year.
- As of October 1990, the year-over-year growth in labour income was 6.9% compared with 9.1% in 1989 and 10% in 1988. The slowdown reflected fewer hours paid for as well as a sharp increase in labour disputes at a time of plunging corporate profits.

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Year-end review of labour markets

Philip Cross

Labour market developments in 1990 were dominated by the recession. Most of the major economic indicators reflected the deterioration of the economy beginning in the second quarter of the year, and the downturn accelerated through to year-end. The slump originated in deep cuts in housing and business investment, but consumer spending and exports were also sluggish. The recession has been relatively severe compared with other downturns since 1947, except for 1981-82, both in terms of the overall rate of the decline and the number of industries affected.

The unemployment rate rose by about 2 percentage points during 1990 to 9.3% by year-end. Job losses were most severe in goods-producing industries such as manufacturing and construction, while services turned down in the second half of the year. Canada's industrial heartland in Ontario and Quebec was most severely buffeted. The pronounced deterioration in labour market conditions, however, had little apparent moderating effect on wage increases. In fact, increases in most measures of wages accelerated during the year. This upturn in wage demands, occurring against a backdrop of rapidly falling corporate profits, led to a sharp increase in labour disputes during the year.

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This article is based on information available as of January 11, 1991. All monthly data have been seasonally adjusted to provide a better picture of underlying trends. Seasonal movements are those caused by regular annual events such as climate, holidays, vacation periods, and cycles related to crops and production. Seasonally adjusted series still contain irregular and longer-term cyclical fluctuations.

Employment

Employment began the year on a surprisingly buoyant note – it rose in January despite widespread plant shut-downs and layoffs affecting over one-third of the auto industry. The return to work of these employees helped to sustain job growth in the first quarter. The January layoffs in the auto industry, however, proved to be a precursor of employment trends later in the year.

Employment reached a peak of 12.6 million in April. Subsequently, employment fell at an increasing rate, ending the year 1.0% below the level of a year earlier and down 1.6% from the peak in April. Job losses accelerated through the year, with employment posting three consecutive monthly declines at the end of 1990. The auto industry ended the year on the same note as it began, with widespread layoffs and plant shut-downs.

Full-time jobs were cut during the year, while part-time work increased steadily. Full-time employment reached a peak in April, but declined by 241,000 over

Table 1
Labour force summary

		Total labour force	Employed	Full-time employment	Unemployed	Participa- tion rate ¹	Unemployment rate ²
				'000			%
1980		11,573	10,708	9,316	865	64.1	7.5
1981		11,899	11,001	9,515	898	64.8	7.5
1982		11,926	10,618	9,090	1,308	64.1	11.0
1983		12,109	10,675	9,036	1,434	64.4	11.8
1984		12,316	10,932	9,263	1,384	64.8	11.2
1985		12,532	11,221	9,484	1,311	65.3	10.5
1986		12,746	11,531	9,742	1,215	65.7	9.5
1987		13,011	11,861	10,057	1,150	66.2	8.8
1988		13,275	12,245	10,363	1,031	66.7	7.8
1989		13,503	12,486	10,597	1,018	67.0	7.5
1990		13,681	12,572	10,640	1,109	67.0	8.1
1989	December	13,594	12,566	10,666	1,028	67.1	7.6
1990	January	13,649	12,601	10,690	1,048	67.3	7.7
	February	13,652	12,615	10,716	1,037	67.2	7.6
	March	13,574	12,596	10,664	978	66.7	7.2
	April	13,633	12,638	10,717	995	66.9	7.3
	May	13,641	12,591	10,681	1,050	66.9	7.7
	June	13,642	12,600	10,666	1,042	66.8	7.6
	July	13,697	12,606	10,669	1,091	67.0	8.0
	August	13,708	12,558	10,622	1,150	67.0	8.4
	September	13,745	12,579	10,630	1,166	67.1	8.5
	October	13,777	12,552	10,608	1,225	67.1	8.9
	November	13,736	12,487	10,544	1,249	66.8	9.1
	December	13,721	12,440	10,476	1,281	66.7	9.3

Source: Labour Force Survey

¹ The labour force as a percentage of the population 15 years of age and older.

² The unemployed as a percentage of the labour force.

the rest of the year to its lowest level since December 1988. Conversely, part-time jobs posted a net gain of 69,000 from January to December. The substitution of part-time for full-time work typically accompanies a cyclical downturn, as employers cut back on hours worked. As well, in 1990 there was the additional phenomenon of rapid growth in part-time jobs in retailing after Ontario stores opened for Sunday shopping. Involuntary part-time employment (people working part-time only because they could not find full-time jobs) accounted for all of the net increase in part-time work.

Other indicators showed an increase in underemployment, on top of the contraction in overall employment. The number of people working short time rose by

a quarter to about 200,000 by year-end. The number with more than one job rose in the first half of the year, but these increases were wiped out by drops in the second half. As well, the number of people working extra hours dropped steadily through the year, falling over 200,000 from its peak early in the recession. In total, according to the Survey of Employment, Payrolls and Hours, the number of hours paid for by employers dropped by 1.7% between January and October 1990, compared with no change in LFS employment over the same period.

The number of people on temporary layoff was higher in every month of 1990 than in any month of 1989. This trend began early in 1990, as temporary layoffs almost doubled to over 100,000 people in January.

Layoffs as a percentage of employment averaged 0.7% in the year, just below the record of 1% set in 1982. The auto industry, where workers have historically had a high probability of being laid off,¹ recorded the highest rate of layoffs. (These data cover only those workers who expect to return to jobs – permanent layoffs due to plant closings, of which 1990 saw many as bankruptcies soared, are not included.)

Employment by industry

Goods-producing industries bore the brunt of the downturn, as is usual in recessions. Goods industries suffer the most because consumers and businesses can more easily postpone purchases of major durable goods than purchases of services. In turn, slumping manufacturing and construction demand translates into lower demand for products from primary industries such as forestry and mining. Services, while not exempt from the effects of recession, typically are not as affected. Goods-handling industries, such as transportation and wholesale trade, however, tend to be more cyclically sensitive.

Employment in the goods-producing sector began to turn down in the last quarter of 1989. Employment fell throughout 1990, for a total drop of 5.4% by December. This reduced employment in goods to its lowest level since 1987. In fact, employment at the end of 1990 was below that prior to the 1981-82 recession, partly a reflection of the weak gains made during the intervening expansion due to the emphasis on raising productivity. At the end of the year, however, the total decline in the current recession was less severe than the 9% drop recorded in 1982.

Within goods, the slackening of employment affected all major industries. The largest decreases occurred in manufacturing. Employment in this industry began to wane late in 1989, and recorded steady drops in 1990, as firms were squeezed by weak demand and a rising Canada/U.S. exchange rate. Job losses totalled almost

200,000 (8.7%) in the 12 months of 1990, comparable with the decline in 1982. The largest declines were recorded in areas related to construction and clothing. Industries such as furniture and wood were affected by the collapse of new housing demand in Central Canada. Clothing, textiles and leather industries (along with furniture) were among those expected to be most severely affected by free trade (and indeed they began to shrink in 1989). The auto industry also experienced a year of layoffs, cut-backs and labour unrest.

Construction employment was battered by receding house construction and a plunge in non-residential building, following four years of robust growth. Employment in the industry fell by more than 9% between April and December 1990. The slump in construction began in Ontario as the housing boom of recent years went bust, but quickly spread to all regions. Unlike manufacturing, however, employment remained substantially above the levels registered early in the decade.

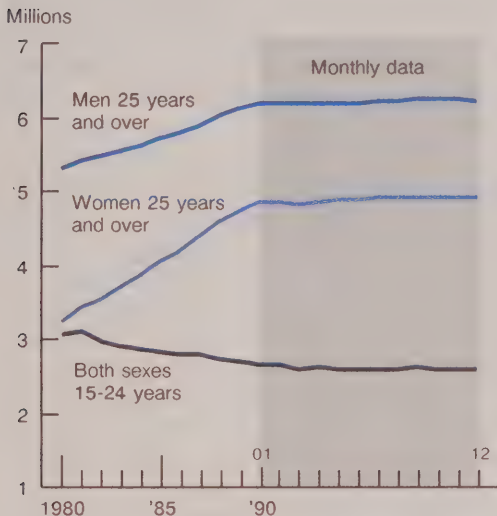
Employment in the primary industries weakened for the second consecutive year. Agricultural employment rose marginally after declining every year since 1983. A bumper grain crop on the Prairies in 1990 was offset by job losses in Ontario. The other primary industries – fishing, forestry, and mining – posted large declines beginning in May. Cut-backs in fish quotas on the east coast and weak demand for lumber and metals accounted for most of these declines. Employment in this sector of the economy never fully recovered from the 1981-82 recession.

Employment in services edged up 2.3% for the year as a whole. All of the gains were realized in the first seven months, however, as the recession curtailed employment thereafter. Employment was weakest in goods-handling industries such as transportation and in non-essential consumer services.

Main labour market indicators

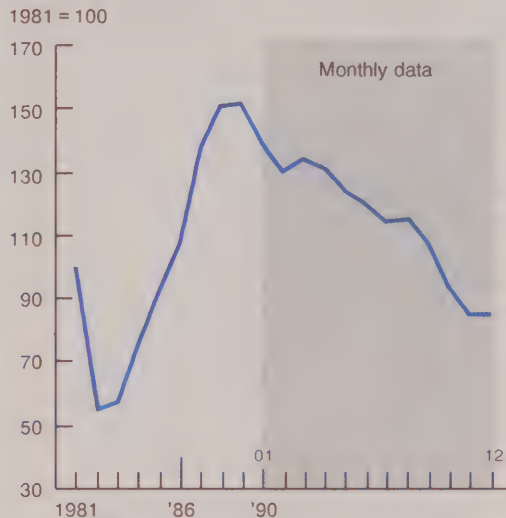
Labour force

The labour force grew at a slightly slower rate in 1990.



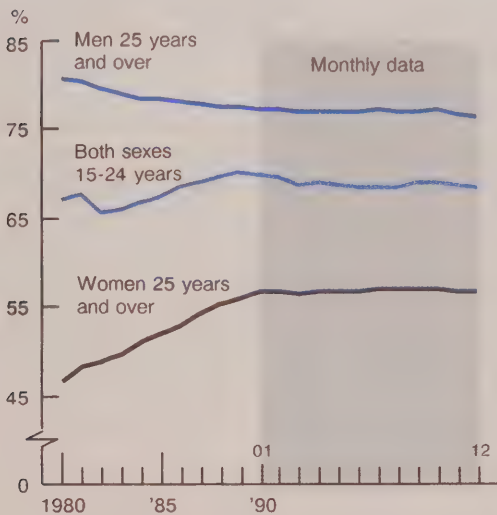
Help-wanted index

Since April 1989, the help-wanted index has declined steadily.



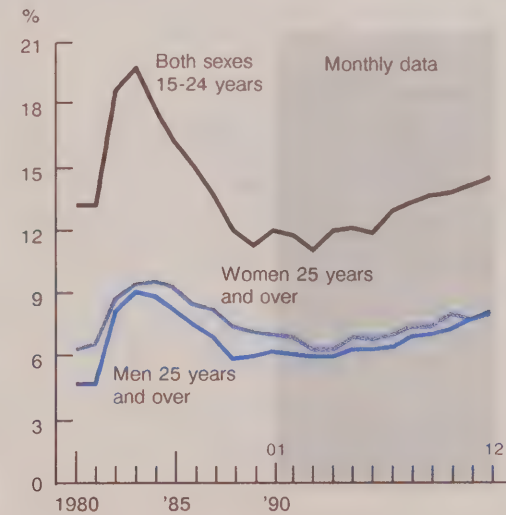
Participation rates

In 1990, the participation rate of men 25 and over dropped below 77% for the first time.



Unemployment rates

In mid-1990 the unemployment rates for all major age groups began a steady increase.



Source: Labour Force Survey

Note: Monthly data are seasonally adjusted.

Jobs in transportation, storage, and communication fell throughout the year, with a total decline of 4% from December 1989. Transportation posted the largest drops, reflecting the lower volume of shipments of manufactured goods by truck, and of metals, wood and grain by rail and shipping.

Community, business, and personal services posted a net gain of 140,000 in employment. This overall increase in jobs, however, masked considerable variations by industry. Broadly speaking, employment in discretionary consumer services was weak, notably for food, accommodation, and personal services. Services to business management was relatively robust through most of the year, while non-commercial services such as education, and health and welfare grew steadily.

Employment in trade benefited from a sharp increase in the retail sector in Ontario in the second half of the year. Most of the new jobs were part-time, related to the introduction of Sunday shopping. Wholesale trade was weak throughout the year, reflecting the slack in both domestic and international trade.

Employment by province

Ontario and Quebec were the biggest job losers during 1990. These two provinces had led employment gains in 1987 and 1988, but began to lag behind the other regions in 1989. The concentration of manufacturing in Central Canada (77% of manufacturing jobs) largely explains the more severe impact of the recession on these two provinces. British Columbia was the only province to post a significant increase in jobs in the year, although employment growth stalled after September. The Atlantic and Prairie provinces posted small gains, but again all the growth occurred early in the year.

Ontario posted a net decline of over 100,000 jobs from the peak level reached in

February. Goods-producing industries fell by over 160,000 – with manufacturing alone contracting by 110,000. Slumping house construction also contributed to a 54,000 drop in construction employment as the Toronto real estate boom of recent years collapsed. Services posted an overall gain of 41,000 jobs, largely originating in retail trade.

Employment in Quebec rose slowly in the first half of the year, but fell rapidly in the second, for a net decline of 47,000. Unlike Ontario, both goods and services shrank during 1990. Manufacturing accounted for all of the 41,000 decline in goods. The weakness in services was concentrated in personal services.

The Prairie provinces posted little change in employment for most of the year, after increases in January and February. Bumper grain crops helped to bolster employment in all three provinces, as agriculture accounts for 1 in every 10 jobs on the Prairies. Other primary industries also posted solid gains, partly due to a recovery in the oil and gas industry, as prices rebounded after four years of weakness. Services posted modest gains, which were partly offset by declines in construction and manufacturing.

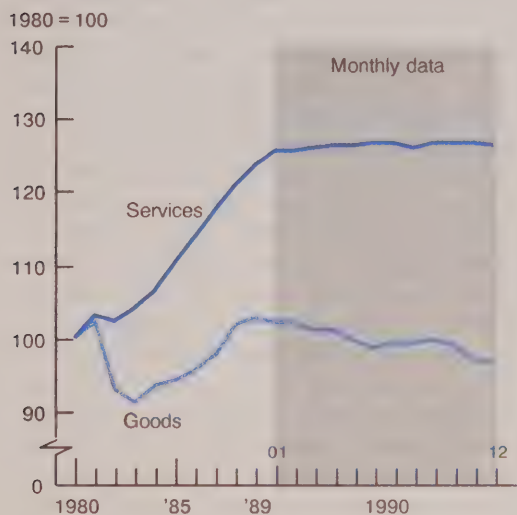
The Atlantic provinces registered little net change in jobs, as increases in services offset decreases for goods. Newfoundland posted large declines in the first half of the year, partly due to shutdowns in the fish industry, but rebounded later in the summer. New Brunswick recorded little change, reflecting slack in the mining, forestry, and paper industries. Nova Scotia benefited from growth in services, while Prince Edward Island showed little change.

The 2.4% employment growth in British Columbia, from the 1989 average, was driven almost exclusively by community, business and personal services, which rose by 5.2%. Overall employment fell,

Employment and earnings changes

Employment changes

Goods-producing industries bore the brunt of job losses.



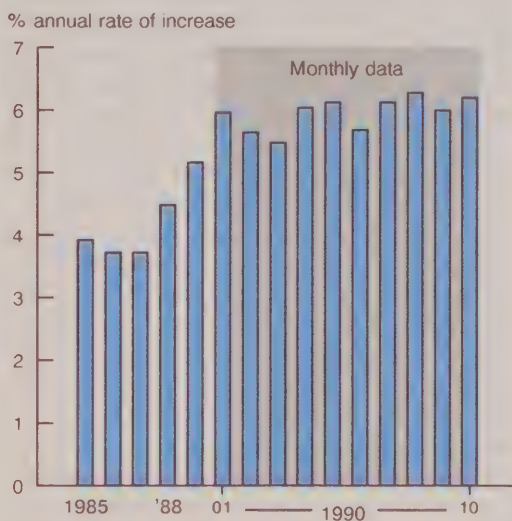
While full-time jobs were lost, part-time work increased steadily in 1990.



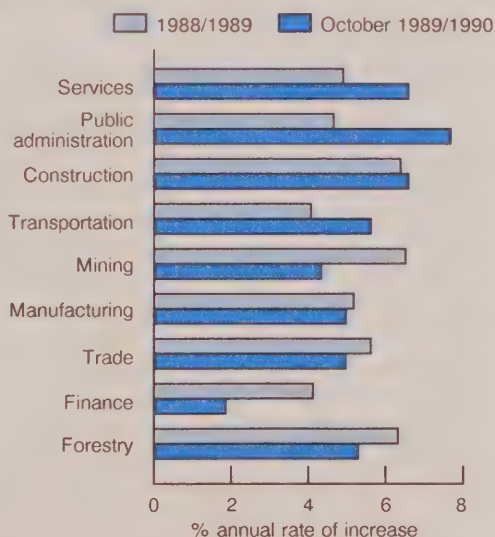
Source: Labour Force Survey
Note: Monthly data are seasonally adjusted.

Average weekly earnings

Growth in average hourly earnings (fixed-weight basis) outpaced the consumer price index in 1990.



Services had the strongest growth in average weekly earnings.



Source: Survey of Employment, Payrolls and Hours

however, in the fourth quarter. Goods-producing industries posted widespread declines in 1990. As in the other regions, manufacturing shrank. Other primary industries posted the largest drop, the outcome of sluggish demand for forestry and mineral products. For the year as a whole construction was stagnant, as a slump in the Vancouver real estate market led to a downturn in the second half of the year.

Comparison with past recessions

The relation between output and employment in the current economic downturn was consistent with some new labour market trends that emerged in the 1980s.² In particular, firms were very fast to cut their demand for workers. Job losses not only appeared more quickly, but they were also more severe – affecting services as well as goods-producing industries. In recessions during the 1950s and 1960s, employment changes tended to lag behind changes in output – if employment fell at all.³ On average, employment in recessions prior to 1981 rose by 0.7%.

In the five recessions prior to the 1980s, the average lag between cuts in output and employment was five months. In the 1981-82 recession, however, both turned down in the same month. Moreover, the percentage drop in employment (5.5%) was virtually identical to the cut in production (5.3%). A similar phenomenon was evident in 1990, with employment reaching a peak in April, about the same time as output. The 1.6% drop in employment from April to December compares with a 1.2% decline in gross domestic product (GDP) as of October.

The faster and more pronounced reaction of employment in the current recession (and in the previous one) reflects a number of factors. Unemployment rates have been consistently higher in the 1980s, reducing the risk to firms of not finding workers when recovery begins. Several

labour contracts, such as those negotiated with auto firms, use unemployment insurance and company contributions to protect incomes even during layoffs. This reduces the incentive for unions to negotiate protection from layoffs, and assures firms that laid-off workers will not look for other jobs. Firms have also steadily increased their reliance on part-time employment, allowing them more flexibility to adjust personnel needs during downturns. Finally, better communication and control methods have probably improved the flow of information within firms, enabling them to adjust their employment levels more efficiently. These techniques have been evident in the markedly lower level of inventories held by firms in the past decade.

To date, the current recession shares some similarities with previous downturns. Goods-producing industries have borne the brunt of the downturn. Manufacturing and construction have led the drop, as firms and individuals postponed purchases of durable goods. As usual, services have been less severely affected, with employment posting only a 0.4% decline from its 1990 peak level. This small decline, however, marks only the second time that services have posted a decrease of any magnitude during a recession (1981-82 was the other instance).

The increased sensitivity of services to business cycle fluctuations may partly derive from one of their principal sources of growth in recent years. Some preliminary research has indicated that part of the relatively rapid growth of services reflects an increasing trend by firms to contract out services formerly done "in-house".⁴ When goods-producing firms cut back on these services, the losses are now recorded in the services sector, not in the goods sector. As well, large budget deficits increasingly limit the ability of governments to increase spending during recessions as much as in previous downturns.

Demand for labour

The help-wanted index (1981 = 100) dropped about 47% from its peak in April 1989 to a level of 85 in December 1990, approximating the decline posted in the 1981-82 recession. The drop in 1990 was evident in all regions, and the downward trend persisted throughout the year.

Sharp retreats in the help-wanted index during recessions are a reflection of how firms reduce hiring – new positions are not created and vacancies are not filled. A new database compiled by Statistics Canada sheds some light on how firms adjust their human resource needs over the business cycle.⁵ Briefly, most of the adjustment in 1982 was accomplished by a cut in hiring, from 3.8 million to 1.9 million people. In addition, temporary layoffs increased slightly, but nowhere near the adjustment accomplished by less hiring.

The year-long tumble in the help-wanted index likely reflects a similar cut-back in hiring in 1990. This is corroborated by the pronounced weakness of employment in 1990 for young people aged 15 to 24. Youths suffered the most from the cut-back in hiring in the 1981-82 recession as well, as entry-level positions disappeared.

The labour force and participation rates

The labour force grew at a slightly slower rate (1.3%) in 1990 than in the previous two years. With population growth continuing at a steady rate, this reflected a levelling off of labour force participation rates at about 67%.

The number of young people aged 15 to 24 in the labour force continued to decline, as the "baby boom" gave way to the "baby bust" in labour markets. The number of youths in the labour force declined from a peak of over 3 million in 1981 to 2.6 million in 1990. Besides a lower population, partici-

pation rates for young people also dropped slightly. This may be related to a sharp increase in enrolment at colleges and universities, possibly because of a perceived lack of job opportunities.

Women aged 25 years and over continued to be the most rapidly growing segment of the labour force. The largest increase in participation rates was in Quebec, where the rate had lagged behind the national average since the 1970s. The participation rate for women 25 and over rose to 53.2% in Quebec, versus 56.7% for Canada, the smallest differential on record. An increase in the unemployment rate for men, to above that for women for the first time since 1982, also increased the incentive for women to search for jobs to maintain family income levels.

The participation rate for men aged 25 and over continued to edge down, dipping below 77% in November for the first time on record. Most of the drop originated among older workers (aged 55 and over) and may reflect the proliferation of early retirement packages offered in plant closings in many goods-producing industries.

Unemployment

After touching a 10-year low in March, the number of unemployed began to rise, climbing back over the 1 million level in May and swelling to about 1.28 million by year-end, the highest level since late 1985. Temporary layoffs alone accounted for 9% of the unemployed at year-end, up from 5% a year earlier.

Increased joblessness hit all major age-sex groups in the labour force. The largest increases were for persons aged 25 years and older. The 34% increase for men reflected stagnant employment coupled with a small increase in the labour force. For women 25 and over, employment gains did not keep pace with rising labour force participation, and many of the new entrants

to the labour force went directly into the ranks of the unemployed (up 15%).

Unemployment among youths rose by about 24% from December 1989. All of this increase reflected lower employment, as the number of young people and their participation rate declined.

Unemployment rate

After declining to a low of 7.2% in March, the unemployment rate rose swiftly to 9.3% by year-end, the highest rate in three years, although still below the peak of 12.8% reached late in the 1981-82 recession. The rate would have been higher if the labour force had not contracted in the last two months of the year. The largest increase was for young men and women, reflecting the sharp decline in jobs for this group. Men aged 25 and over posted the next largest increase, rising to 8.2% by the end of 1990, compared with 6.3% at the start of the year. This jump mirrored the upward trend of unemployment in industries that employ mostly males, such as construction, mining, forestry and, to a lesser extent, manufacturing.

The rate of unemployment among women aged 25 and over fell in the first four months by almost a full percentage point, reaching a low of 6.4% in April. Thereafter, however, the rate rose steadily to 8.1%, almost a full percentage point above the level of a year earlier. The less severe impact of the recession on industries that traditionally employ more women, noticeably in services, was reflected in the lower unemployment rate by year-end for women aged 25 and over compared with men of the same age. This was the first time since the last recession that the female unemployment rate was lower.

Wage rates and incomes

Labour income growth decelerated steadily during the year, as employment losses and reduced hours worked took a mounting toll on paycheques. Labour income grew by 6.9% in the year to October, compared with 9.1% in 1989 and 10% in 1988. With price inflation up nearly 5%, this implies an even greater erosion in real incomes.

All of the slowdown in incomes originated in fewer paid hours, as average hourly earnings rose during the year. The upturn of wage rates is rather surprising in light of the rapid growth in the reservoir of the unemployed and the sharp decline in corporate profits. Total corporate profits fell by over 20%, and as a share of GDP they fell to only 6.9%, virtually the same as the record low in 1982.

The fixed-weighted index of average hourly earnings rose by an average of about 6% during the year to October, almost a full percentage point above the gains posted in 1989. (The fixed-weighted index abstracts from changes in the occupational or industry mix of employment, and as such is a purer measure of wage changes than the conventional measure of average hourly earnings.) Services led the rise, up 6.1%, with public administration, transportation, business services, and personal services posting the largest increases.

Even the goods-producing sector posted an acceleration in earnings, despite the sharp drop in demand for labour in this area. Earnings rose by an average 5.5%, while hours paid for fell over 8% in the latest month. Construction and manufacturing posted above-average increases. Part of the increase may be attributable to lower-seniority, and hence lower-paid, employees being laid off first under many union contracts.

The upturn in wage demands at a time of rising unemployment was probably related to a desire to recoup the decline in

real wages that persisted through most of the 1980s. As well, the prospect of higher inflation in 1991 due to increasing energy prices and tax changes may also have stiffened bargaining demands. (Earnings in the United States also accelerated by slightly more than a percentage point in 1990, although no large increase in indirect taxes is planned for 1991.)

Whatever the reasons for higher wage demands, they conflicted with plunging profit margins for most firms. As a result, the number of labour disputes increased sharply. The Labour Force Survey shows twice as many hours lost to labour disputes as in 1989. Strikes were concentrated in the goods-producing sector, where profits were lowest and unemployment highest. The first large strike began in the Ontario construction industry in May. Other strikes followed, in the steel industry in August, and in the auto and newsprint industries in September. While settlements were high, they often

included more flexibility for employers to raise productivity and limit the increase in unit labour costs.

Conclusion

As 1991 began, the recession showed few signs of easing. The fourth quarter 1990 drop in jobs and the increase in unemployment were the largest of the year. The slump also spread to all regions. With bankruptcies among small firms soaring, profits shrinking to record lows, and both business and consumer confidence plumbing new depths, the labour market will likely remain unsettled for some months. The entry into recession of the United States economy will also remove one of the few sources of support the Canadian economy had during the spring and summer. Labour market developments through the first half of 1991 will be explored in *Perspectives'* mid-year review. □

Notes

¹ See G. Picot and J. Baldwin, *Canadian economic observer* (1990).

² See F. Roy-Mayrand, *Canadian economic observer* (1989).

³ At the time, a number of theories were advanced to explain why employment varied less and with a lag relative to production, emphasizing the costs of layoffs and of searching for and training new workers when recovery began.

⁴ In February 1988, the Services Division of Statistics Canada conducted a pilot survey on the ability of organizations to report on their use of selected services, in-house or contracted out. An incidental finding from this survey indicated an increase in the use of outside service firms.

⁵ Picot and Baldwin, loc. cit.

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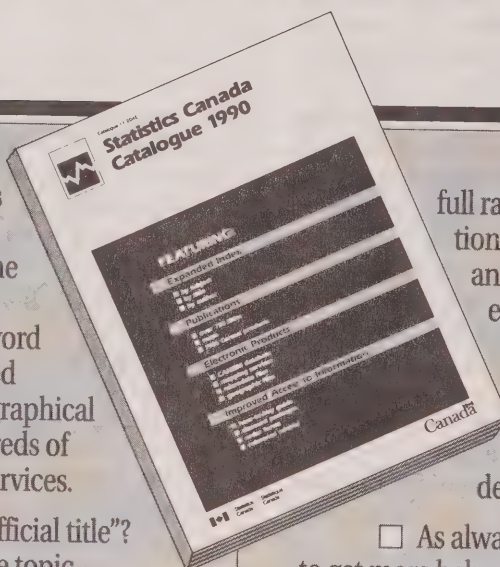
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Technical notes

Data source

Data collected by the Family Expenditure Survey (FAMEX), conducted nationally every four years since 1953, relate family expenditures to family income and other family characteristics. This study uses FAMEX data on spending by Canadian families during 1986. For further information about the survey, see the User's Guide, *Family Expenditure in Canada, 1986*, Statistics Canada, Catalogue 62-555.

How discretionary income was calculated⁶

Six steps were used to estimate discretionary income (DI) and spendable discretionary income (SDI):

1. All 10,356 spending units in the FAMEX sample were divided into separate groups according to size of the household and urbanization of the area. This was done because living expenses vary significantly depending upon the number of people in the home, and are believed to vary according to the size of area of residence. Thus, all families in the FAMEX sample were separated into groups sharing the same two basic characteristics; for example, all two-person rural households were collected into one group, all four-person large urban households in another, and so on. The procedure created a matrix of 25 different household types, ranging from one-person rural to five-or-more person urban with populations over 500,000.

2. Once the groups had been established, the consumption expenditures of each household in a particular group were calculated. First, personal income taxes and Unemployment Insurance premiums (defined by FAMEX as part of annual consumption) were subtracted from the household's total expenditures. Then, the remaining expenditures – items such as shelter, transportation, clothing, and education – were defined as the household's "annual consumption level". (Other compulsory payments, such as Canada or Quebec Pension Plan, and provincial health plan payments, were not deducted for this initial study. However, calculations showed that deducting compulsory pensions made no significant difference to the results.)

3. After establishing the "annual consumption level" for each household, an average level was

calculated for the group. This group average then became the basis for calculating the "discretionary income line" (DIL) for each type of household.

4. The average "annual consumption level" estimated for each group was multiplied by 1.3, to establish an income cut-off or "DIL" that was 30% above the average consumption level for each type of household. There are 25 DILs (see table). A cut-off of 30% was used to identify households with a "standard of living comfortably higher than the average for similar families".⁷ The 30% mark was also used to remain consistent with the U.S. study cited earlier.

5. After the DIL for each household type had been established, households with after-tax income greater than others in the same group were identified using a two-step procedure. First, the after-tax income for each household was determined by subtracting total personal income taxes from total income; then, the household's after-tax income was compared to the DIL for its group. If its after-tax income exceeded the DIL threshold, the household qualified as having discretionary income (DI).

6. Having identified those households with incomes above the DIL for their type, the next step was to estimate the actual dollars available for consumption or saving – the spendable discretionary income (SDI). This was determined by subtracting the DIL dollar amount from the household's after-tax income. The resulting difference was the SDI available to that individual household.

For example, consider a two-person spending unit living in a rural area. Assume that the household has an income of almost \$40,000. To determine if it has DI, the following calculations are made:

- (a) Total income: \$39,800
- (b) Less personal income taxes: \$5,450
- (c) Equals after-tax income: \$34,350
- (d) The DIL for the group: \$27,612

Since this household's after-tax income is greater than the DIL for its group, it has discretionary income (DI). Furthermore, it has \$6,738 (\$34,350 – \$27,612) in spendable discretionary income (SDI).

Number of persons in spending unit

	1	2	3	4	5 +
Discretionary income line (dollars)					
Size of area of residence					
Urban centre 500,000 or more	21,874	36,171	46,193	51,733	55,805
Urban centre 100,000 – 499,999	18,348	33,583	41,577	48,892	52,305
Urban centre 30,000 – 99,999	19,132	31,052	36,817	43,690	54,055
Urban centre less than 30,000	16,357	30,051	37,380	44,100	51,450
Rural (farm + non-farm)	15,986	27,612	36,145	39,620	43,406

Source: Family Expenditure Survey, 1986

Notes

¹ F. Linden, G.W. Green, Jr. and J.F. Coder, *A marketer's guide to discretionary income: a joint study*, p. 7.

² Ibid., p. 7.

³ A. Rashid, *Characteristics of high income families, 1980*, p. 31.

⁴ Linden et al, p. 12.

⁵ Engel's Law was formulated by nineteenth century German statistician Ernst Engel, and states that "as a

family's income increases, it spends a declining proportion of that income on food and other necessities; in other words, poor families spend a much greater share of their income on food and necessities than do rich families". (D. Crane, *A dictionary of Canadian economics*, p. 108.)

⁶ The methodology used to derive discretionary income has been modified from the calculation used in the U.S. study, in order to "fit" the data limitations and definitional differences posed by FAMEX.

⁷ Linden, Green and Coder, loc. cit.

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Then and now: The changing face of unemployment

Gary L. Cohen

They number more than one million. They live in every city, town and neighbourhood in Canada, and are members of every social, economic and demographic group. They are the unemployed.

In economic terms, the 1980s were quite diverse for Canada. The unemployment rate in 1980 was 7.5% and 865,000 people were unemployed. The overall economic picture that year was mixed as employment growth averaged 3% while inflation exceeded 10%. In 1981-82, the economy weathered its most severe recession in half a century. This period was followed by seven years of steady growth. As the decade closed, however, the economic indicators were again mixed: inflation was down to the 4% range, but employment growth averaged just 2%; there were 1,018,000 unemployed and the unemployment rate was again 7.5%.

This article compares the characteristics of the unemployed of 1989 and 1980 in order to show how the face of unemployment has changed over the decade.

Fewer youths are unemployed

Although the average unemployment rate in 1989 exactly matched the rate in 1980, the

number of unemployed was up 18% as the labour force had expanded rapidly over the decade.

The age structure of unemployment shifted considerably during the 1980s. At the beginning of the decade, nearly one-half of the unemployed were youths (15 to 24 years), whereas in 1989 youth unemployment made up less than one-third of the total.

In part, this drop was the result of the reduced incidence of unemployment among 15 to 24 year-olds. Specifically, the youth unemployment rate fell from 13.2% in 1980 to 11.3% in 1989, likely because of rising school attendance and the increased availability of part-time employment. In addition, however, the decline in youth unemployment also reflected the rapid shrinking of the youth population – from 4.6 million in 1980 to 3.8 million in 1989 – as the last of the baby boomers moved into the older age groups.

At the same time that unemployment was declining for youths, it was increasing among persons aged 25 to 44: their unemployment rate rose from 5.9% in 1980 to 7.2% in 1989, while their population expanded from 6.8 million to 8.6 million. The number of unemployed 25 to 44 year-olds rose by more than 60% over the decade and their share of total unemployment climbed from 37% to 52%.

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Male-female differences have narrowed

Throughout most of the 1970s and the early 1980s, unemployment rates for women were much higher than for men. The average difference in these rates, from 1972 to 1981, was 1.8 percentage points. This gap disappeared, however, from 1982 to 1984 as the recession hit men harder than women. The gap returned in 1985, but since then the difference has been much smaller (an average of just 0.6 percentage points).

The explanation for this phenomenon is as follows. The number of unemployed women increased more rapidly than the number of unemployed men during the 1980s (21% compared with 15%). But, proportionally, the rise in female unemployment was a lot smaller than the rise in the

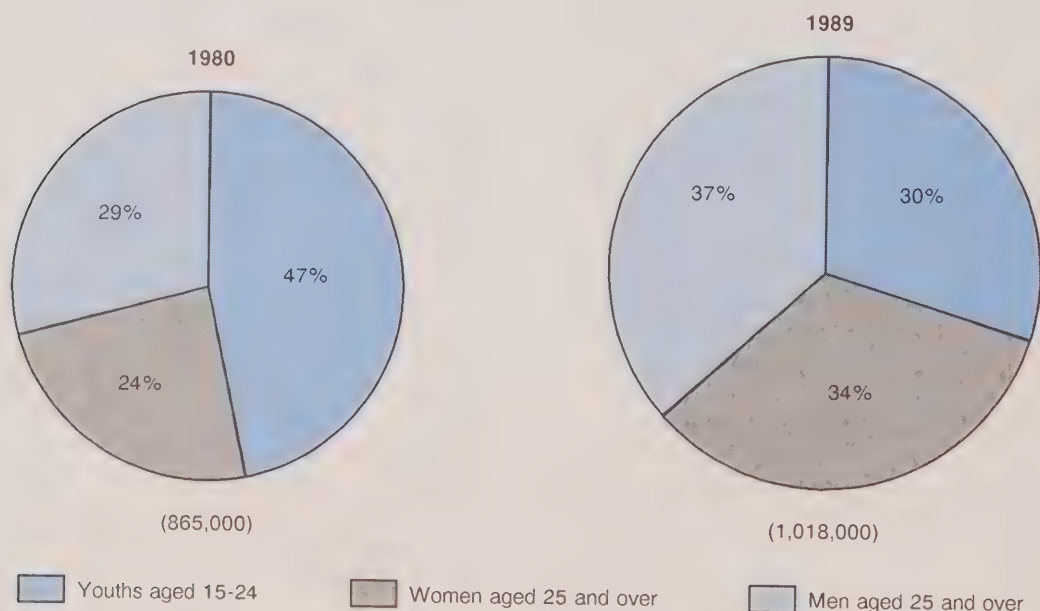
female labour force (the sum of the employed and the unemployed). Thus, the unemployment rate for women fell from 8.4% in 1980 to 7.9% in 1989. In contrast, the percentage increase in the number of unemployed men was larger than the rise in the male labour force, so their unemployment rate rose from 6.9% to 7.3%.

Unemployment soared in Western Canada; Central Canada's share declined

At the start of the 1980s, unemployment in Canada could be divided into three roughly equal portions: one-third in Ontario and another in Quebec, with the remainder of the country making up the final third. This pattern shifted substantially over the decade.

Unemployment by age and sex

The decline in youth unemployment reflects a shrinking population and rising school attendance.



Source: Labour Force Survey

Table 1
Unemployment by sex and age, 1980 and 1989

	Number of unemployed		Change: 1980 to 1989	Unemployment rate	
	1980	1989		1980	1989
	'000		%	%	
Both sexes					
15 years +	865	1,018	18	7.5	7.5
15-24 years	404	303	-25	13.2	11.3
25-34 years	209	316	51	6.6	8.1
35-44 years	111	209	89	5.0	6.1
45-54 years	88	113	30	4.9	5.3
55 years +	54	76	42	4.1	5.7
Men					
15 years +	476	548	15	6.9	7.3
15-24 years	225	175	-22	13.7	12.4
25-34 years	112	160	42	5.9	7.4
35-44 years	58	103	78	4.3	5.5
45-54 years	47	59	27	4.1	4.8
55 years +	35	51	46	3.9	5.8
Women					
15 years +	389	470	21	8.4	7.9
15-24 years	179	128	-29	12.6	10.1
25-34 years	97	156	61	7.6	8.8
35-44 years	53	106	101	6.1	6.9
45-54 years	41	54	32	6.2	5.9
55 years +	19	26	34	4.6	5.4

Source: Labour Force Survey

Unemployment rates in Ontario and Quebec dropped. All other provinces recorded increases. The smallest rise (less than 0.5 percentage points) took place in Nova Scotia; the largest (3.5 percentage points) occurred in Prince Edward Island and Alberta.

During this period, the number of unemployed in Ontario declined by more than 10% (the only province to record a decrease), while Quebec showed only a small rise. The four eastern provinces sustained a 30% increase. At the same time, the number of unemployed in the four western provinces jumped by almost 80% (led by a rise of more than 120% in Alberta).

As a consequence, by 1989, Western Canada's share of unemployment accounted for nearly one-third of the national total (up

from 20% in 1980), while that of Central Canada (Ontario and Quebec) made up just 57% (down from 70% in 1980).

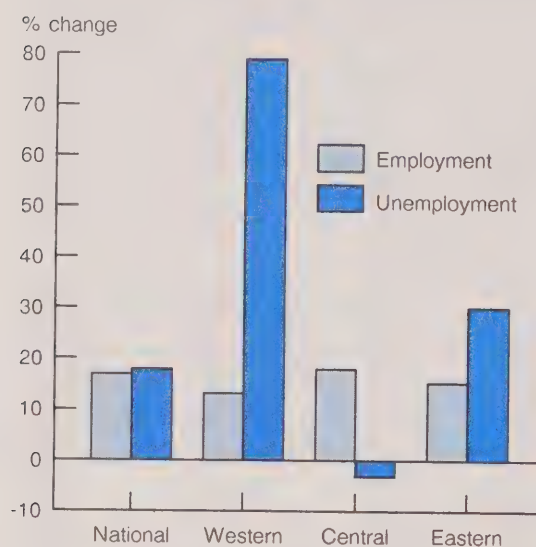
Expressed in other terms, the 18% national rise in the number of unemployed from 1980 to 1989 consisted of a 3% fall in unemployment in the two central provinces, coupled with a rise of more than 60% in the remaining eight provinces.

Today's unemployed are more highly educated

In 1980, more than three-fifths of the unemployed had a partial or complete high school education only; about one in five had primary schooling only (less than Grade 9) and a similar number had achieved at least some postsecondary education.¹

Changing regional patterns from 1980 to 1989

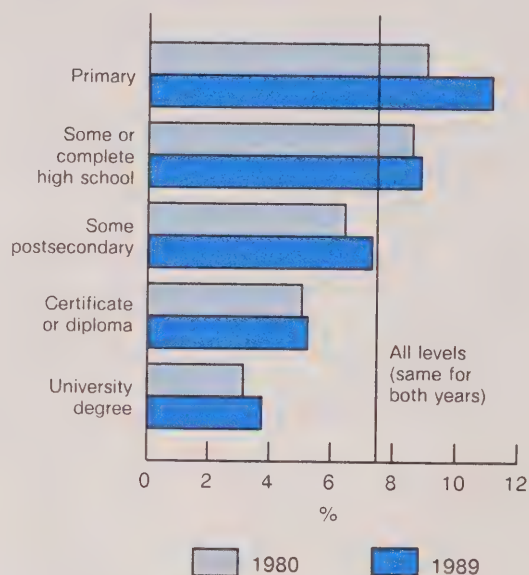
While employment growth was similar across the country, unemployment shifted substantially.



Source: Labour Force Survey

Unemployment rate by education

Although unemployment rates have risen for all levels of education, university graduates still have the lowest rate.



Source: Labour Force Survey

Table 2
Unemployment by province, 1980 and 1989

	Number of unemployed		Change: 1980 to 1989	Unemployment rate	
	1980	1989		1980	1989
	'000		%	%	
Canada	865	1,018	18	7.5	7.5
Newfoundland	27	38	38	13.3	15.8
Prince Edward Island	6	9	59	10.6	14.1
Nova Scotia	35	41	18	9.7	9.9
New Brunswick	31	41	32	11.0	12.5
Quebec	294	311	6	9.8	9.3
Ontario	297	264	-11	6.8	5.1
Manitoba	27	41	53	5.5	7.5
Saskatchewan	19	36	88	4.4	7.4
Alberta	42	94	124	3.7	7.2
British Columbia	88	144	63	6.8	9.1

Source: Labour Force Survey

During the 1980s, education boomed in Canada. The number of persons with at least some postsecondary education rose from 4.5 million to 7 million. (The number with university degrees jumped from 1.5 million to 2.4 million.) Not surprisingly, the educational characteristics of the unemployed also changed during this period.

In 1989, twice as many of the unemployed had at least some postsecondary education (29%) as had a primary education only (14%). In fact, fully 7% of the unemployed in 1989 (75,000 persons) had a university degree.

This huge shift in the distribution of unemployment by education level should have resulted in a reduction in the overall unemployment rate, as rates of unemployment are substantially lower for more highly educated persons. But, the overall unemployment rate did not fall because the shift to a more highly educated populace was balanced by increases in the unemployment rate at each level of education. For example, the rate for persons with primary schooling only climbed from 9% to more than 11%, while that for persons with university degrees rose from 3.1% to 3.7% (see *Statistics can be misinterpreted*).

Statistics can be misinterpreted

At first glance, the fact that the unemployment rates for 1980 and 1989 were the same (7.5%) suggests that the degree of labour market tightness was broadly similar in both years. But, statistics aren't always exactly what they appear to be, so they should be interpreted with care.

There is, for instance, a phenomenon called compositional change. This occurs when the characteristics of the various components of some aggregated grouping are quite different and there are pronounced differences in the rate of growth of each component.

For example, as noted in the text, the rate of unemployment rose between 1980 and 1989 at all levels of education. But, the overall unemployment rate did not change because of the relatively large increase in the proportion of the unemployed who were more highly educated.

If the labour force of 1989 had been distributed among the various educational levels in the same proportions as in 1980 (and assuming the same 1989 unemployment rate for each educational group), then the overall 1989 rate of unemployment would have been about 8% rather than the 7.5% that was actually recorded.

The effect of compositional change on aggregate values can be seen with other characteristics as well. For example, the sharply declining youth population during the 1980s also had the effect of holding down the overall rate of unemployment, as young people, both in 1980 and 1989, experienced much higher than average rates of unemployment.

Therefore, it is important to be careful when using statistics, and particularly to be aware that, when comparing two periods, compositional shifts can have a significant impact on the amount of change that is apparently being measured.

Table 3
Unemployment by educational attainment, 1980 and 1989

	Number of unemployed		Change: 1980 to 1989	Unemployment rate	
	1980	1989		1980	1989
	'000		%	%	
All levels	865	1,018	18	7.5	7.5
Primary (0-8 years)	164	140	-15	9.0	11.1
Some or complete high school	535	585	9	8.6	8.9
Some postsecondary	62	103	65	6.4	7.3
Postsecondary certificate or diploma	65	115	75	5.0	5.2
University degree	38	75	97	3.1	3.7

Source: Labour Force Survey

Unemployment now lasts much longer

In general, it seems reasonable to assume that the burden imposed by unemployment increases as the duration of unemployment rises. In 1989 the duration of unemployment was much greater than in 1980.²

In 1989, the average duration of unemployment was 18 weeks compared with just under 15 weeks in 1980 (a rise of more than 20%). Among unemployed men, duration rose from 15 to 19 weeks, while for women, it rose from 14 to nearly 17 weeks.³

Increases in the duration of unemployment were reported by all age groups except those 15 to 24, where duration dropped from 12 to 11 weeks. For the unemployed aged 35 years and over, and especially for those aged 55 and over, the duration of unemployment rose greatly over the decade.

An alternative way to look at the duration of unemployment is by measuring the incidence of long-term unemployment, that is, the proportion of total unemployment accounted for by persons who have been unemployed more than six months. This proportion rose from 15% in 1980 to 20% in 1989.

Table 4

Duration of unemployment by age and sex, 1980 and 1989

	Total*		4 weeks or less	5-13 weeks	14-26 weeks	27 weeks or more	Average duration
	'000			%			weeks
Both sexes							
15 +							
1989	1,018	100	31	27	19	20	17.9
1980	865	100	32	30	19	15	14.7
15-24							
1989	303	100	41	31	15	10	11.3
1980	404	100	36	32	18	11	12.4
25-34							
1989	316	100	29	27	21	21	17.5
1980	209	100	31	29	20	17	15.8
35-44							
1989	209	100	26	26	20	24	21.2
1980	111	100	30	29	20	18	16.0
45-54							
1989	113	100	25	26	18	27	23.5
1980	88	100	28	28	21	20	18.2
55 +							
1989	76	100	21	21	19	35	28.3
1980	54	100	24	28	20	24	20.0
Men 15 +							
1989	548	100	30	27	19	21	19.0
1980	476	100	32	31	19	15	15.1
Women 15 +							
1989	470	100	32	28	19	19	16.6
1980	389	100	33	30	18	15	14.3

Source: Labour Force Survey

* Includes "future starts", that is, persons having a new job to start within four weeks, who did not recently search for work and for whom no duration data are available.

Unemployment and the family

Most people live with one or more family members,⁴ so too the unemployed. Nearly 85% (857,000) of the 1,018,000 unemployed persons in Canada in 1989 were members of families; the remainder lived alone.

The majority of the unemployed living in families were members of two-parent families with children (502,000); slightly more than 100,000 were in single-parent families with children and one-quarter million were in other families (families without children).⁵

If we assume that the burden of unemployment on families should be defined in terms of its economic impact, then the family employment situation should provide a rough indicator of this burden. To illus-

trate, the characteristics of families experiencing unemployment in 1989 are shown in the following table.

The majority of unemployed persons who were part of single-parent families did not have any employed family members; this was particularly apparent among single-parent families with young children (less than 6 years old). In contrast, nearly 80% of the unemployed who were members of two-parent families had at least one employed person in their family.

Thus, the burden of unemployment among families, as so defined, would appear to be most severe for the unemployed who were members of single-parent families, especially for those with pre-school age children.

Family status of the unemployed, 1989

Family status	Number of unemployed	Employed family members			
		Total	None	One	Two or more
	'000		%		
All unemployed	1,018	100	41	40	19
Unattached individuals	160	100	100	...	...
Persons in families	857	100	30	47	23
Families with children*	607	100	27	44	29
Less than 6 years	185	100	39	57	5
6-15 years	226	100	27	44	29
16 years +	195	100	16	32	53
Single-parent families with children*	105	100	56	31	13
Less than 6 years	21	100	94	--	--
6-15 years	39	100	67	25	--
16 years +	45	100	30	47	23
Two-parent families with children*	502	100	21	47	33
Less than 6 years	165	100	32	63	5
6-15 years	187	100	19	48	34
16 years +	150	100	11	27	62
Other families**	251	100	37	55	8

Source: Labour Force Survey

* Age of children refers to the age of the youngest child.

** Families without children.

The incidence of long-term unemployment rose for both men and women and for all age groups, except those 15 to 24. This change was particularly apparent among the unemployed aged 55 and over, 35% of whom were unemployed for more than six months in 1989 compared with 24% at the beginning of the decade. As there is no ready explanation available for the shift towards longer-term unemployment, this subject likely merits further research.

An alternative measure of unemployment

Another method of measuring the magnitude of unemployment would be to derive a new statistic, by multiplying the average number of unemployed persons by their average duration of unemployment. Using this technique, in 1980, there were 865,000 unemployed persons averaging 14.7 weeks of unemployment each for a total of 12.7 million person-weeks of unemployment. In 1989, there were 1,018,000 unemployed averaging 17.9 weeks for a total of 18.2 million person-weeks of unemployment. Measured in this manner, the "volume" of unemployment rose by more than 40% from 1980 to 1989.

Most unemployed continue to want full-time work

In both 1980 and 1989, the vast majority of the unemployed (almost 80%) sought full-time work (30 hours or more per week). About 14% looked for part-time employment. (The remainder were not searching for work either because they were waiting to be recalled to their previous jobs or because they were waiting to start new jobs within four weeks.)

There were few changes over the decade in the type of work wanted. However, young people in 1989 were more likely to be seeking part-time employment than in 1980 (27% compared with 17%). This probably reflects the increasing proportion of young people attending school, as well as the considerable rise in part-time employment opportunities over the last 10 years.

Most unemployed are job losers

For the most part, patterns of pre-unemployment activity did not change much during the 1980s: in both 1980 and 1989, two of every three unemployed persons had previously been working; the remainder had not been in the labour force.

About one-half of the unemployed in 1989 were job losers, that is, persons who had been working and had either lost their jobs or been laid off temporarily. The incidence of "job-losing" tended to increase with age, and it was higher for men (60%) than for women (41%). Over the decade, job-losing became somewhat more prevalent for women as more of them obtained jobs.

Approximately 20% of the unemployed were job leavers – persons who had been working and had quit their last jobs (for any of a variety of reasons). This proportion was similar for all age groups, for both men and women.

As well, some 10% of the unemployed, mainly youths, were previously attending school. And a further 10%, virtually all of whom were women, had been keeping house before seeking employment.

Conclusion

Over the last decade, the face of unemployment in Canada altered considerably. The incidence and magnitude of youth unemployment diminished substantially, and the differential in unemployment rates between men and women narrowed.

As well, a tremendous shift took place in the regional dimension of unemployment: conditions in Ontario and Quebec improved, whereas the situation in the western provinces worsened substantially.

Overall, unemployment in 1989 was a more severe problem for the Canadian economy than in 1980. The actual number of unemployed was much greater, the burden of unemployment affected prime-age workers more heavily, and the duration of unemploy-

ment rose substantially. Moreover, the unemployment rate rose for all levels of education between 1980 and 1989, and many well-educated persons seemed to be encountering difficulties finding suitable employment opportunities. □

Notes

¹ Educational attainment refers to the highest level of completed schooling.

² Duration of unemployment, as measured by the Labour Force Survey, refers to a continuous period of unemployment for those persons currently unemployed. It is not a measure of the duration of joblessness (which includes periods spent outside the labour force). And, because it only measures unemployment that is still in progress, it does not measure the duration of completed spells of unemployment. Thus it understates, to an unknown extent, the actual length of time persons are unemployed.

³ The average duration of unemployment jumped dramatically during the 1981-82 recession, peaking at nearly 22 weeks in 1983. Since then, the level has decreased very gradually.

⁴ According to the Labour Force Survey, a family consists of two or more persons who live together in the same dwelling and are related by blood, marriage or adoption.

⁵ The family characteristics of the unemployed in 1989 were generally similar to those of 1980. But persons who were members of "other families" accounted for a slightly larger share of the unemployed in 1989 than in 1980, while the proportion of the unemployed who belonged to two-parent families declined slightly over the decade.

Sources

A potpourri of information: survey news, including special surveys conducted as supplements to the Labour Force Survey; notes on research projects inside and outside Statistics Canada; recent publications and data releases; other items of news and future events.

Surveys of transitions from school to work

One of life's major changes is moving from the classroom to the workplace. The success of this transition depends on a complex interaction between personal characteristics, the level and type of education received, and the labour market conditions prevailing at various times following the departure from school. This process takes years to complete, and to determine how the success of the transition affects careers years later, analysts require data from longitudinal surveys. (In longitudinal surveys, the same respondents participate in the same survey at different points in time.)

Acting on behalf of Employment and Immigration Canada (EIC), Statistics Canada has conducted a number of longitudinal surveys of graduates of several kinds of educational institutions. The first of these, addressed to the class of 1976, was held in 1978 and the most recent, covering the class of 1986 for the second time, will be undertaken in the next few months.

This table summarizes these surveys.

Class of...	Graduates of...	Years they were surveyed...
1976	Universities Community colleges	1978
1982	Universities Community colleges Trade/ vocational programs	1984, 1987
1986	Universities Community colleges Trade/ vocational programs	1988, 1991

Preliminary results of the 1991 Follow-up Survey of 1986 Graduates should be released in late 1991. Public use microdata tapes will be available from Special Surveys Group, Statistics Canada; analytical reports are scheduled for publication by EIC and the Education, Culture and Tourism Division of Statistics Canada. For further information, please call Bill Magnus, Statistics Canada, at (613) 951-4577, or Yigal Messeri, Employment and Immigration Canada, at (819) 994-4537.



Nationwide child care survey expected to produce avalanche of studies and recommendations

Comprehensive new information about child care arrangements made by working parents is now available to contribute to the child care debate in Canada.

This survey was conducted by Statistics Canada in partnership with the National Daycare Research Network, a consortium of four universities supported by Health and Welfare Canada. The survey provides extensive data that address most aspects of the issue – from a parent's decision to return to work after a child's birth and the use of different types of care, to support offered by employers and the family tensions generated by conflicting demands.

The National Child Care Survey (NCCS) was conducted in September and October 1988 as a supplement to the monthly Labour Force Survey in households with a child or children under the age of 13. Data collection was not restricted to working parents; any eligible family was interviewed, regardless of labour force activities. The results will enable analysts to examine issues such as the way use of care is linked to parents' work schedules, the experience of low-income families in finding affordable child care, and the effect of different types of child care arrangements on parents' attendance at work.

With the completion of the NCCS, the Daycare Network is embarking on an ambitious publications program. Planned for release over the next few years are: a series of descriptive volumes addressing different aspects of the survey; a collection of 12 volumes of provincial/territorial data on child care programs and survey results for the province; and a series of analytical reports presenting topics of particular interest. Information can be obtained from

Dr. Donna Lero, University of Guelph at (519) 824-4120; FAX (519) 824-9553.

Users interested in purchasing the public use microdata tape from Statistics Canada, please call Sue Lafrance at (613) 951-0524. □

General Social Survey begins second round of survey cycles

The General Social Survey (GSS) kicked off 1991 with the second five-year round of its ongoing survey of Canadians' well-being. With Cycle 6, the GSS now begins to repeat the sequence of five basic topics chosen to monitor the social environment; these topics are health, time use, personal risk, work and education, and the family.

Cycle 6 – with its emphasis on health issues – entered the field in January. The target sample includes an oversample of 2,000 respondents 65 years and older, resulting in a total of 12,000 respondents who will be contacted for the 30-minute telephone interview. Questions asked in the survey will cover: health status; visits to health care professionals; physical activity (and limits to such activity); alcohol and tobacco consumption; sleep; and the impact of work on health. The Cycle 6 data can be used to make comparisons with data from the 1985 GSS Cycle 1 on health and the 1978/79 Canada Health Survey. The collection of similar information on health indicators over the past 12 years will allow analysts to assess changes in health status during the period.

Cycle 6 introduces an innovation to the GSS. For the first time, the data will be collected over 12 months instead of 2 or 3. The change is due to the seasonal nature of many of the topics being explored; for example, flus are more common in winter, while summer brings increased physical activity.

Preliminary results of the GSS Cycle 6 should be available in the spring of 1992. For further information, please call Ed Praught at (613) 951-9180. □

Change in calculation of labour income

Statistics Canada produces a data series known as "Labour Income", which estimates the total amount of all wages, salaries and supplementary labour income paid to all Canadian employees each month. This important series, perhaps best known for its role in estimating the National Accounts, is also used in various measures of Canada's overall economic performance.

The estimates are generated by combining current data from the Survey of Employment, Payrolls and Hours (SEPH) with benchmark values obtained from Revenue Canada-Taxation. A significant change in the methodology used in the calculations necessitates the revision of the annual labour income estimates from 1985 to the present.

The reason for the change stems from the increasing tendency among large companies with multiple establishments to pay their employees across the country from head office central pay accounts. When such a company reports employee earnings to Revenue Canada-Taxation, the wages and salaries of regional office employees are included under the province of the head office, not necessarily their province of employment. Because Statistics Canada uses Revenue Canada-Taxation files, this practice had begun to affect the estimates of wages and salaries at the provincial and territorial level. Earnings have been overestimated in Central Canada where head offices tend to be located, and underestimated in some provinces, the two territories and abroad. The problem has now

been rectified with the introduction of a new method of coding and calculation.

The revisions do not have a dramatic effect on the provincial data previously released; nevertheless, wages and salaries have been redistributed from Quebec, Ontario and Manitoba to the other provinces, the territories and abroad. The largest significant difference between the old and the revised figures is a 6.9% rise in wages and salaries allocated to Nova Scotia in 1985.

A technical paper detailing the change in methodology is available from the Labour Income Section of Labour Division. For information, please contact Ed Bunko at (613) 951-4048. □

"New and improved" annual averages from the Labour Force Survey

Statistics Canada has introduced a new year-end report for users of information on the Canadian labour force. *Labour Force Annual Averages 1990* meets the needs of two distinct readers: the analyst who wants highly detailed data on specific characteristics that are not found in the monthly publication *The Labour Force* (Catalogue No. 71-001); and the user who prefers annual averages to the monthly Labour Force Survey (LFS) figures.

Labour Force Annual Averages 1990 provides a forum for publication of data for smaller regions and presents more detailed coverage of larger areas. Labour force data include employment, unemployment, participation rates and persons not in the labour force, by variables such as: educational level, family structure, industry and occupation, number of jobs held, job search methods, and so on. It also publishes LFS data subject to high sampling variability and therefore more appropriately expressed

on an annual, rather than a monthly, basis; for example, worker absences by industry, occupation and province.

Labour Force Annual Averages 1990 (Catalogue No. 71-220) offers brief analytical highlights, approximately 100 pages of tables, and definitions and concepts. It is available for \$39 from Publications Sales and Service, Statistics Canada, Ottawa K1A 0T6. FAX orders can be placed at (613) 951-1584. □

The demographic situation in Canada

In publishing the annual *Report on the Demographic Situation in Canada*, Statistics Canada provides an overview of the current situation in the country and its regions, and identifies the trends and their consequences.

A sample of highlights from the most recent report, published in November 1990, includes:

- In 1989, the rate of population growth increased slightly, mostly because of more immigrants, coupled with a greater number of births. The rate was highest in British Columbia at 26.2 per 1,000, compared with 15.2 in Ontario. In Saskatchewan, there was negative growth (-0.6).

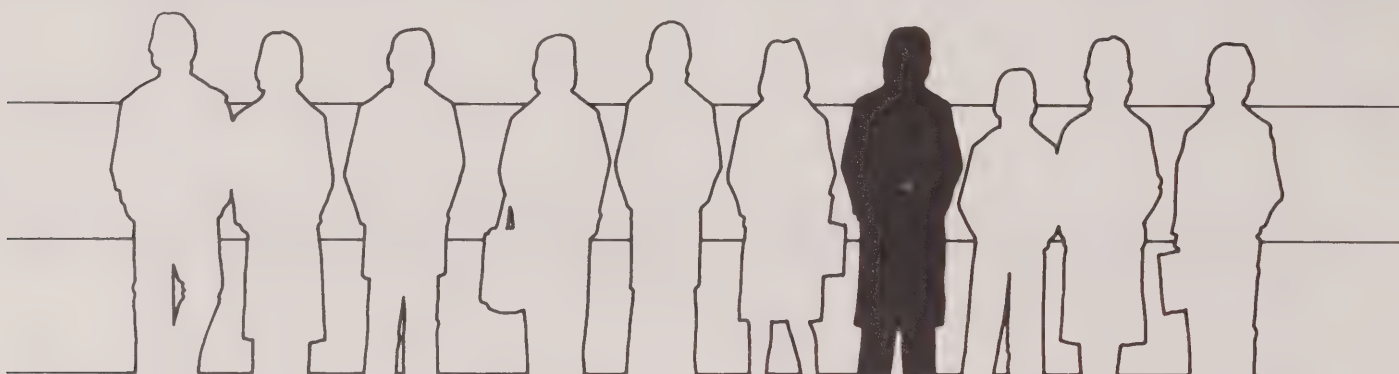
- In 1989, British Columbia recorded a net migration of nearly 40,000 people. The similar figure for Ontario was -6,600.

Each annual report includes a section that focuses on one particular theme. The 1990 report briefly compares the demographic behaviour of the Canadian and American populations. Findings are:

- The white American population is slightly older than the Canadian population.
- In proportion to its population, the United States accepts far fewer immigrants than Canada: 16% of Canada's population was born outside the country compared with 6% of the American population.
- Life expectancy is one year higher for Canadians than for white men and women in the United States.

To obtain *Report on the Demographic Situation in Canada, 1990* (Catalogue No. 91-209E/\$26), contact the nearest Statistics Canada office or write to Publications Sales, Statistics Canada, Ottawa K1A 0T6 (national toll-free order line 1-800-267-6677).

For further information about the publication, contact Jean Dumas at (613) 951-2327. □



Over three million Canadian adults have a disability ...

The Health and Activity Limitation Survey (HALS) interviewed over 120,000 disabled Canadians residing in households and institutions. The result is a unique and detailed database on the barriers faced by more than 1 in 10 Canadians during the conduct of their daily activities.

Whether you plan and develop policies and programs for persons with disabilities, employ disabled people, or design accommodation facilities or transportation services, HALS can provide you with the information you need to make better decisions.

A comprehensive profile of the disabled population is available for each

province and territory. Special studies are also underway and cover issues such as:

- characteristics of disabled persons who are not in the labour force
- special needs of seniors with disabilities
- socio-economic conditions specific to women with disabilities

Call your nearest Statistics Canada Regional Reference Centre and find out more about the publications, special request service and microdata files from HALS. Our centres are listed in this publication.

Key labour and income facts

The following selection of labour and income indicators is drawn from 11 sources and includes published and unpublished annual data. The first 53 indicators appear in every issue and the remainder address a different topic each time.

The latest available annual data are always shown; as results become available, the indicators are updated so that every issue contains new data. An indicator updated since the last issue is "flagged" with an asterisk.

Data sources

The indicators are derived from the following sources:

- | | |
|-----------|---|
| 1-11 & 15 | Labour Force Survey
Frequency: Monthly
Contact: Doug Drew (613) 951-4720 |
| 12-14 | Labour Market Activity Survey
Frequency: Annual
Contact: Richard Veevers (613) 951-4617 |
| 16 | Absence from Work Survey
Frequency: Annual
Contact: Denis Lefebvre (613) 951-4600 |
| 17 | Workers' Compensation Statistics
Frequency: Annual
Contact: Joanne Proulx (613) 951-4040 |
| 18 | Help-wanted Index
Frequency: Monthly
Contact: André Picard (613) 951-4045 |
| 19-21 | Unemployment Insurance Statistics
Frequency: Monthly
Contact: André Picard (613) 951-4045 |
| 22-29 | Survey of Employment, Payrolls and Hours
Frequency: Monthly
Contact: Howard Krebs (613) 951-4063 |

- | | |
|-------|---|
| 30-32 | Labour Canada, Major Wage Settlements
Frequency: Quarterly
Contact: Gilles Léger (819) 953-4234 |
| 33-35 | Labour Income (Revenue Canada-Taxation-based statistics, Survey of Employment, Payrolls and Hours and other surveys)
Frequency: Quarterly
Contact: Ed Bunko (613) 951-4048 |
| 36-46 | Survey of Consumer Finances
Frequency: Annual
Contact: Kevin Bishop (613) 951-2211 |
| 47-53 | Household Facilities and Equipment Survey
Frequency: Annual
Contact: Penny Barclay (613) 951-4634 |
| 54 | Small Area and Administrative Data Division
Frequency: Annual
Contact: Customer Services (613) 951-9720 |

Notes on the method of deriving certain indicators are given at the end of the table.

Additional data

The table provides at the most 2 years of data for each indicator. A longer time series (generally 10 years) for this set of indicators can be obtained on request, on paper or diskette, at a cost of \$50. (A more extensive explanation of the indicators is also available.) This 10-year data set is updated annually in April. Contact: Gilles Myre (613) 951-4627.

Key labour and income facts

No.	Unit	Year	Canada	Nfld.	P.E.I.	N.S.	N.B.
Labour market							
*1 Labour force	'000	1989	13,503	238	63	414	325
		1990	13,681	242	65	424	331
Change	%		1.3	1.6	2.4	2.3	1.7
*2 Participation rate	%	1989	67.0	55.7	65.0	61.2	59.5
		1990	67.0	56.0	66.0	62.1	59.8
*3 Employed	'000	1989	12,486	201	54	373	284
		1990	12,572	201	55	379	291
Change	%		0.7	—	1.5	1.6	2.2
*4 Proportion of employed working part-time	%	1989	15.1	11.5	15.7	16.0	14.9
		1990	15.4	11.3	15.5	15.8	14.6
*5 Proportion of part-timers wanting full-time work	%	1989	22.2	55.1	36.1	31.5	37.5
		1990	22.4	52.3	35.5	33.1	37.9
*6 Unemployed	'000	1989	1,018	38	9	41	41
		1990	1,109	41	10	45	40
Change	%		9.0	10.1	7.9	8.8	-1.4
*7 Official unemployment rate	%	1989	7.5	15.8	14.1	9.9	12.5
		1990	8.1	17.1	14.9	10.5	12.1
Alternative measures of unemployment							
*8 Unemployed 14 or more weeks as a proportion of the labour force	%	1989	2.9	6.8	5.3	3.8	4.9
		1990	3.1	8.3	5.6	4.2	4.6
*9 Unemployment rate:							
— of persons heading families with children under age 16	%	1989	6.8	15.6	14.2	9.2	11.8
		1990	7.3	16.5	15.3	9.3	11.2
— excluding full-time students	%	1989	7.4	15.8	14.6	9.8	12.4
		1990	8.0	17.2	15.4	10.5	12.0
— including full-time members of the Canadian Armed Forces	%	1989	7.5	15.7	13.9	9.6	12.3
		1990	8.1	17.0	14.7	10.2	11.9
— of the full-time labour force	%	1989	9.0	18.6	17.4	12.1	15.0
		1990	9.6	19.7	18.2	12.8	14.6
— of the part-time labour force	%	1989	9.7	15.8	8.2	12.3	14.4
		1990	10.1	15.6	7.6	12.9	13.5
— including persons on the margins of the labour force	%	1989	8.2	18.9	16.1	10.8	14.1
		1990	8.7	20.3	16.4	11.3	14.0
*10 Underutilization rate based on hours lost through unemployment and underemployment	%	1989	9.5	19.3	17.8	12.8	15.6
		1990	10.2	20.3	18.5	13.5	15.4
*11 Proportion unemployed 6 months or longer	%	1989	20.1	21.3	14.1	18.0	19.2
		1990	18.4	26.8	15.8	18.5	17.6

See notes at end of table.

Key labour and income facts

Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Year	Unit	No.
3,343	5,214	538	482	1,308	1,578	1989	'000	1
3,399	5,268	544	483	1,324	1,601	..	..	1990	
1.7	1.0	1.1	0.2	1.2	1.5	..	..		%
64.0	69.8	67.0	66.2	72.4	66.8	1989	%	2
64.3	69.4	67.6	66.8	72.1	66.0	..	..	1990	
3,031	4,949	498	446	1,214	1,435	1989	'000	3
3,055	4,937	505	449	1,231	1,469	..	..	1990	
0.8	-0.3	1.4	0.7	1.4	2.4	..	..		%
13.5	15.5	17.2	16.6	15.3	16.2	1989	%	4
13.8	15.8	18.2	17.1	15.0	16.7	..	..	1990	
31.8	13.5	21.9	27.9	19.3	25.8	1989	%	5
33.1	14.5	21.8	27.5	19.3	21.4	..	..	1990	
311	264	41	36	94	144	1989	'000	6
345	331	39	34	93	132	..	..	1990	
10.7	25.1	-2.9	-5.7	-0.9	-8.0	..	..		%
9.3	5.1	7.5	7.4	7.2	9.1	1989	%	7
10.1	6.3	7.2	7.0	7.0	8.3	..	..	1990	
4.3	1.5	3.0	3.1	2.5	3.6	1989	%	8
4.5	2.0	2.8	2.5	2.2	2.9	..	..	1990	
										9
7.8	4.7	6.0	7.4	6.5	8.3	1989	%	
8.6	5.6	5.9	6.7	6.5	7.7	..	..	1990	
9.3	4.9	7.3	7.3	7.0	8.9	1989	%	
10.1	6.0	6.9	6.9	6.8	8.1	..	..	1990	
9.3	5.0	7.5	7.4	7.1	9.0	1989	%	
10.1	6.2	7.2	7.0	7.0	8.2	..	..	1990	
11.3	5.8	9.2	9.6	8.3	10.8	1989	%	
12.2	7.1	9.1	9.1	8.1	9.8	..	..	1990	
10.7	8.0	9.8	9.7	9.9	12.3	1989	%	
11.8	9.1	8.9	9.5	10.5	10.4	..	..	1990	
10.5	5.3	8.0	8.0	7.5	9.5	1989	%	
11.3	6.5	7.7	7.5	7.3	8.6	..	..	1990	
11.7	6.2	9.7	10.2	8.9	11.3	1989	%	10
12.6	7.7	9.7	9.8	8.7	10.4	..	..	1990	
27.0	13.2	20.6	20.4	17.4	20.6	1989	%	11
23.7	13.8	19.3	16.7	15.3	16.5	..	..	1990	

See notes at end of table.

Key labour and income facts

No.		Unit	Year	Canada	Nfld.	P.E.I.	N.S.	N.B.
Other labour market indicators								
12	Employed at some time in the year, male, age 16 to 69	'000	1986	7,560	151	36	235	191
	– as proportion of male population age 16 to 69	%		87.4	80.7	87.8	82.7	82.0
		'000	1987	7,584	152	36	235	191
		%		86.5	80.9	87.8	82.2	81.6
	Employed at some time in the year, female, age 16 to 69	'000	1986	5,987	109	29	187	149
	– as proportion of female population age 16 to 69	%		67.4	58.0	69.0	62.1	61.8
		'000	1987	6,042	110	30	191	153
		%		67.1	57.9	71.4	63.0	63.0
13	Unemployed at some time in the year, male, age 16 to 69	'000	1986	1,601	63	11	63	56
	– as proportion of male population age 16 to 69	%		18.5	33.7	26.8	22.2	24.0
		'000	1987	1,497	59	11	59	59
		%		17.1	31.4	26.8	20.6	25.2
	Unemployed at some time in the year, female, age 16 to 69	'000	1986	1,441	45	9	58	46
	– as proportion of female population age 16 to 69	%		16.2	23.9	21.4	19.3	19.1
		'000	1987	1,345	46	9	55	48
		%		14.9	24.2	21.4	18.2	19.8
14	Full-time, full-year male paid workers	'000	1986	4,039	53	14	117	90
			1987	4,035	55	14	115	89
	Full-time, full-year female paid workers	'000	1986	2,468	35	10	71	53
			1987	2,528	36	11	74	52
*15	Days lost per full-time worker per year through illness or for personal reasons	days	1989	9.4	9.6	8.1	8.6	9.6
			1990	9.4	10.1	7.3	9.1	9.3
16	Proportion of paid workers absent two or more consecutive weeks because of illness or accident	%	1988	6.4	5.1	5.7	4.7	6.0
			1989	6.7	6.2	5.2	5.4	7.4
*17	Workers receiving workers' compensation for time-loss injuries	'000	1988	618	10	2	11	12
	Change	%	1989	621	11	2	14	13
				0.5	6.2	0.6	23.9	8.0
18	Help-wanted index (1981 = 100)		1988	149	180			
			1989	152	196			

See notes at end of table.

Key labour and income facts

Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Year	Unit	No.
1,928	2,850	306	289	733	843	..	..	1986	'000	12
84.5	90.0	89.0	90.0	90.4	85.6	..	..		%
1,921	2,886	305	280	718	859	..	..	1987	'000	
83.5	89.2	88.2	87.5	88.3	85.6	..	..		%
1,434	2,331	256	229	601	661	..	..	1986	'000	
60.6	71.4	72.1	71.6	74.9	65.8	..	..		%
1,434	2,367	264	219	592	682	..	..	1987	'000	
60.2	71.2	72.7	68.7	73.4	66.7	..	..		%
459	457	58	50	167	217	..	..	1986	'000	13
20.1	14.4	16.9	15.6	20.6	22.0	..	..		%
434	432	57	42	150	193	..	..	1987	'000	
18.9	13.3	16.5	13.1	18.5	19.2	..	..		%
377	482	49	44	139	192	..	..	1986	'000	
15.9	14.8	13.8	13.8	17.3	19.1	..	..		%
375	424	51	40	127	171	..	..	1987	'000	
15.7	12.8	14.0	12.5	15.7	16.7	..	..		%
1,013	1,682	154	130	370	416	..	..	1986	'000	14
1,028	1,666	148	128	370	423	..	..	1987		
632	998	109	80	237	242	..	..	1986	'000	
610	1,052	107	81	239	265	..	..	1987		
10.2	9.6	8.8	8.6	8.2	8.4	..	..	1989	days	15
10.5	9.5	9.0	8.0	7.3	8.5	..	..	1990		
8.1	6.2	6.2	5.2	5.5	5.5	..	..	1988	%	16
7.7	6.8	5.0	5.4	5.1	6.4	..	..	1989		
218	208	23	15	43	73	..	1	1988	'000	17
219	201	22	14	45	80	..	1	1989		
0.3	-3.6	-4.4	-6.7	3.3	8.4	..	-3.7		%	
172	180	82			96	..	..	1988		18
173	167	90			128	..	..	1989		

See notes at end of table.

Key labour and income facts

No.		Unit	Year	Canada	Nfld.	P.E.I.	N.S.	N.B.
Unemployment insurance								
*19	Total beneficiaries	'000	1988	1,015	71	13	50	57
			1989	1,030	76	14	53	58
	Change	%		1.5	6.6	6.8	5.3	0.4
*20	Total beneficiaries as a proportion of contributors	%	1988	7.9	28.7	21.2	12.4	17.6
			1989	7.8	29.9	21.7	12.7	17.1
*21	Regular beneficiaries without reported earnings	'000	1988	780	58	10	38	47
	Change	%	1989	785	61	10	39	47
				0.6	5.7	5.8	1.6	-1.1
Earnings (including overtime) and hours								
22	Average weekly earnings in current dollars	\$	1988	463.80	443.99	379.26	417.92	421.16
			1989	486.87	465.80	400.82	432.86	442.80
	Change	%		5.0	4.9	5.7	3.6	5.1
23	Average weekly earnings in 1981 dollars	\$	1988	322.53	320.57	278.05	298.09	298.27
			1989	322.43	324.83	283.06	295.47	299.59
	Change	%		--	1.3	1.8	-0.9	0.4
24	Average weekly earnings of salaried employees in current dollars	\$	1988	568.12	524.26	493.20	516.66	523.26
			1989	598.87	559.86	522.94	537.24	552.16
	Change	%		5.4	6.8	6.0	4.0	5.5
25	Average weekly earnings of salaried employees in 1981 dollars	\$	1988	395.08	378.53	361.58	368.52	370.58
			1989	396.60	390.42	369.31	366.72	373.59
	Change	%		0.4	3.1	2.1	-0.5	0.8
26	Average weekly earnings of hourly paid employees in current dollars	\$	1988	370.41	353.66	256.22	330.64	342.13
			1989	388.20	363.16	264.60	341.66	362.48
	Change	%		4.8	2.7	3.3	3.3	6.0
27	Average weekly earnings of hourly paid employees in 1981 dollars	\$	1988	257.59	255.35	187.84	235.83	242.30
			1989	257.09	253.25	186.86	233.22	245.25
	Change	%		-0.2	-0.8	-0.5	-1.1	1.2
28	Average weekly hours of hourly paid employees	hrs	1988	32.1	35.5	32.6	33.0	34.0
			1989	31.8	34.8	31.7	32.7	34.1
29	Average weekly overtime hours of hourly paid employees	hrs	1988	1.1	1.7	0.5	0.7	0.9
			1989	1.2	1.6	0.4	0.8	1.0
Major wage settlements								
30	Number of agreements		1988	543	8	2	7	12
			1989	438	7	4	15	5
31	Number of employees	'000	1988	1,192	22	5	5	14
			1989	983	11	3	19	12
32	Increase in base rate on annual basis	%	1988	4.4	4.1	4.8	5.1	4.1
			1989	5.3	5.7	4.7	5.5	4.5

See notes at end of table.

Key labour and income facts

Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Year	Unit	No.
323	216	35	29	78	139	2	2	1988	'000	19
337	214	35	29	78	134	2	2	1989		
4.3	-1.2	2.1	-0.7	-0.8	-3.4	3.6	-1.9		%	
10.2	4.2	7.1	7.5	6.5	9.9	9.8	4.8	1988	%	20
10.4	4.0	7.2	7.5	6.3	9.0	-4.8	-8.8	1989		
259	151	26	22	60	106	1	1	1988	'000	21
270	147	26	22	59	101	1	1	1989		
4.4	-2.7	1.2	-0.5	-1.4	-5.8	-2.5	-8.3		%	
454.01	482.67	422.05	411.30	462.76	466.52	556.24	621.30	1988	\$	22
472.82	509.08	445.08	425.99	484.47	491.63	585.91	663.86	1989		
4.1	5.5	5.5	3.6	4.7	5.4	5.3	6.9		%	
313.11	327.46	297.01	291.91	338.27	339.78	..	..	1988	\$	23
312.71	326.33	299.11	289.59	339.98	342.60	..	..	1989		
-0.1	-0.3	0.7	-0.8	0.5	0.8	..	..		%
540.82	595.75	536.17	527.58	585.04	564.90	666.78	695.96	1988	\$	24
564.69	631.12	562.52	558.45	617.83	594.35	713.95	728.63	1989		
4.4	5.9	4.9	5.9	5.6	5.2	7.1	4.7		%	
372.98	404.17	377.32	374.44	427.66	411.43	..	..	1988	\$	25
373.47	404.56	378.04	379.64	433.56	414.18	..	..	1989		
0.1	0.1	0.2	1.4	1.4	0.7	..	..		%
372.12	384.66	321.24	301.31	340.60	390.19	437.86	521.88	1988	\$	26
387.87	403.25	345.85	309.83	356.00	412.73	439.74	568.71	1989		
4.2	4.8	7.7	2.8	4.5	5.8	0.4	9.0		%	
256.63	260.96	226.07	213.85	248.98	284.19	..	..	1988	\$	27
256.53	258.49	232.43	210.63	249.82	287.62	..	..	1989		
--	-0.9	2.8	-1.5	0.3	1.2	..	..		%
32.8	32.5	30.7	28.7	30.8	30.2	32.9	33.3	1988	hrs	28
32.6	32.0	31.2	28.8	30.5	30.5	32.1	33.8	1989		
1.0	1.3	0.8	0.8	1.4	0.9	2.8	4.9	1988	hrs	29
1.0	1.3	0.9	0.8	1.5	1.1	1.9	3.4	1989		
70	187	38	16	60	67	..	..	1988		30
37	155	7	16	51	49	..	..	1989		
204	323	66	62	132	145	..	..	1988	'000	31
209	237	10	21	83	106	..	..	1989		
4.3	5.3	3.7	2.6	3.1	5.2	..	..	1988	%	32
5.3	6.4	4.6	2.9	3.9	7.0	..	..	1989		

See notes at end of table.

Key labour and income facts

No.		Unit	Year	Canada	Nfld.	P.E.I.	N.S.	N.B.
Labour income								
*33	Labour income in current dollars	\$ million	1988	325.2	4.5	1.0	8.2	6.3
			1989	354.9	4.8	1.0	8.8	6.9
	Change	%		9.1	6.8	7.7	7.2	8.2
*34	Labour income per employee in current dollars	\$	1988	30,327	26,312	22,360	25,594	25,402
			1989	32,326	26,715	23,481	26,798	27,007
	Change	%		6.6	1.5	5.0	4.7	6.3
*35	Labour income per employee in 1981 dollars	\$	1988	21,090	18,998	16,393	18,256	17,990
			1989	21,408	18,630	16,583	18,292	18,272
	Change	%		1.5	-1.9	1.2	0.2	1.6
*36	Net income from self-employment as a proportion of money income	%	1988	5.3	3.5	7.8	5.7	4.3
			1989	5.8	3.9	9.1	5.9	4.2
Earnings of full-time, full-year workers								
*37	Average earnings of men working full-time, full-year	\$	1988	33,600	27,200	23,600	30,500	29,100
			1989	35,100	30,600	25,900	31,900	31,200
	Change	%		4.5	12.6	9.8	4.6	7.2
*38	Average earnings of women working full-time, full-year	\$	1988	21,900	20,400	16,900	19,600	20,200
			1989	23,100	21,700	19,800	21,100	19,400
	Change	%		5.4	6.1	16.7	7.6	-3.8
*39	Ratio of female to male earnings	%	1988	65.3	75.1	71.7	64.4	69.5
			1989	65.8	70.8	76.2	66.2	62.3
Family income								
*40	Average family income	\$	1988	46,200	36,100	34,500	39,700	37,300
			1989	50,083	39,648	38,726	43,123	40,670
*41	Median family income	\$	1988	41,200	32,900	30,700	36,400	33,300
			1989	44,460	35,652	34,548	37,649	36,344
*42	Average income of unattached individuals	\$	1988	19,600	17,000	14,400	16,000	16,100
			1989	21,138	18,995	14,391	17,681	17,207
*43	Median income of unattached individuals	\$	1988	15,000	12,900	12,000	11,300	12,100
			1989	16,598	14,667	11,723	12,441	13,029
44	Average family taxes	\$	1987	8,100	5,100	5,000	6,600	5,500
			1988	8,600	5,100	4,700	6,700	5,800
45	Average family income after tax	\$	1987	35,500	28,600	29,800	31,600	29,700
			1988	37,600	30,900	29,800	33,000	31,500

See notes at end of table.

Key labour and income facts

Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Year	Unit	No.
77.5	140.3	11.1	8.6	30.0	35.9	.4	1.0	1988	\$ million	33
83.2	154.7	11.7	9.0	32.6	40.3	.4	1.0	1989		
7.3	10.2	5.6	4.3	8.5	12.3	7.0	6.2			
29,183	32,434	26,601	24,969	29,651	30,336	1988	\$	34
30,831	35,124	27,749	26,470	31,101	31,987	..	..	1989
5.7	8.3	4.3	6.0	4.9	5.4	..	..	
20,126	22,004	18,720	17,721	21,675	22,095	1988	\$	35
20,391	22,516	18,648	17,995	21,825	22,291	..	..	1989
1.3	2.3	-0.4	1.5	0.7	0.9	..	..	
4.4	4.9	7.4	9.9	6.8	5.7	1988	%	36
4.4	6.4	5.7	10.8	5.6	5.9	..	..	1989
31,700	35,900	29,700	28,400	33,800	34,500	1988	\$	37
34,000	37,400	31,600	27,900	34,400	35,600	..	..	1989
7.1	4.2	6.3	-1.8	1.8	3.3	..	..	
20,900	23,300	20,200	19,200	22,100	21,300	1988	\$	38
21,200	25,200	20,700	20,400	22,800	22,600	..	..	1989
1.3	8.4	2.6	6.0	3.4	6.2	..	..	
65.9	64.8	67.9	67.5	65.3	61.8	1988	%	39
62.4	67.4	65.6	72.9	66.3	63.6	..	..	1989
41,300	52,800	43,100	40,400	46,300	45,300	1988	\$	40
44,860	57,330	46,551	42,978	49,734	49,442	..	..	1989
36,900	47,300	37,400	35,400	41,700	42,000	1988	\$	41
40,187	50,464	41,257	38,068	44,867	46,028	..	..	1989
17,400	21,700	17,100	17,100	20,500	21,000	1988	\$	42
18,302	24,059	19,208	18,670	20,932	22,338	..	..	1989
12,100	17,400	13,800	13,200	15,700	17,300	1988	\$	43
13,682	20,411	14,910	14,094	16,585	18,567	..	..	1989
7,700	9,300	6,700	6,500	8,400	7,800	1987	\$	44
7,900	10,100	7,700	7,000	8,300	8,100	..	..	1988
32,400	39,700	34,500	33,000	32,600	36,000	1987	\$	45
33,500	42,700	35,400	33,300	38,000	37,200	..	..	1988

See notes at end of table.

Key labour and income facts

No.	Unit	Year	Canada	Nfld.	P.E.I.	N.S.	N.B.
*46 Proportion below the low income cut-off (1978 base):							
– families	%	1988	10.5	15.5	10.0	10.8	12.6
		1989	9.6	12.8	9.0	11.4	11.9
– unattached individuals	%	1988	33.1	35.5	33.2	39.4	35.7
		1989	30.5	32.0	35.1	34.7	36.3
– persons (population)	%	1988	13.1	16.7	12.3	13.4	14.5
		1989	12.2	14.5	11.6	13.4	13.8
– children (less than 16 years)	%	1988	15.4	20.7	12.6	15.2	18.3
		1989	14.6	19.7	13.9	16.6	17.6
– elderly (65 years and over)	%	1988	17.2	19.2	17.5	16.9	15.0
		1989	15.9	13.8	14.6	13.8	12.8
Households and dwellings							
*47 Average household income	\$	1988	40,700	34,200	31,100	35,400	34,300
		1989	43,838	37,501	34,273	37,693	36,792
*48 Proportion of households with:							
– VCRs	%	1989	58.8	59.9	50.0	62.1	57.0
		1990	66.3	67.6	62.2	66.7	64.0
– microwaves	%	1989	63.4	52.1	47.7	62.5	59.9
		1990	68.2	56.6	57.8	67.9	66.8
– two or more automobiles	%	1989	25.0	12.6	22.7	21.0	18.6
		1990	24.7	16.2	26.7	19.8	21.5
– vans and trucks	%	1989	25.5	32.3	31.8	28.2	34.3
		1990	23.4	32.4	31.1	23.9	31.6
– air conditioners	%	1989	24.6	...	...	2.6	5.8
		1990	24.4	...	...	3.5	5.7
*49 Proportion of owner-occupied dwellings	%	1989	63.3	79.6	75.0	71.5	75.2
		1990	63.7	79.2	71.1	72.0	75.3
*50 Proportion of all owner-occupied dwellings that are mortgage-free	%	1989	50.6	69.9	54.5	56.6	59.3
		1990	51.1	70.8	59.4	57.6	58.1
*51 Number of occupied dwellings in need of repair	'000	1989	2,369	52	14	94	79
		1990	2,561	54	17	112	81
*52 Dwellings in need of repair as a proportion of all occupied dwellings	%	1989	25.0	31.1	31.8	30.4	32.6
		1990	26.6	31.3	37.7	35.2	32.8
53 Median rent-to-income ratio	%	1988	21	18	22	23	22
		1989	21	17	23	21	19

See notes at end of table.

Key labour and income facts

Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Year	Unit	No.
										46
13.5	7.5	11.1	13.6	10.7	10.1	..	..	1988	%	
11.4	7.0	11.0	12.6	11.0	9.7	..	..	1989	%	
42.7	26.9	33.5	29.3	30.8	30.6	..	..	1988	%	
41.0	23.5	30.0	30.4	30.7	25.2	..	..	1989	%	
16.8	9.5	14.8	16.8	13.8	13.2	..	..	1988	%	
15.1	8.8	14.5	16.1	13.9	11.7	..	..	1989	%	
17.2	11.9	19.7	22.6	16.9	15.2	..	..	1988	%	
15.2	11.3	21.5	22.3	16.8	13.7	..	..	1989	%	
25.2	12.6	16.0	13.4	15.6	18.4	..	..	1988	%	
30.7	9.7	11.0	10.7	14.4	12.5	..	..	1989	%	
										47
36,000	46,900	37,000	35,100	41,200	39,100	..	..	1988	\$	
39,159	50,588	39,980	37,090	43,837	41,777	..	..	1989	\$	
										48
54.4	62.1	56.7	53.4	64.0	57.3	..	..	1989	%	
63.2	69.0	63.1	60.6	71.6	64.0	..	..	1990	%	
59.6	64.5	65.8	71.2	71.8	62.2	..	..	1989	%	
65.5	68.2	68.3	74.9	76.9	68.3	..	..	1990	%	
19.9	29.3	21.9	24.6	29.4	25.7	..	..	1989	%	
21.6	26.5	22.2	25.1	29.7	26.7	..	..	1990	%	
15.6	21.7	32.1	44.1	41.6	34.0	..	..	1989	%	
13.8	20.5	29.1	37.2	37.7	32.3	..	..	1990	%	
14.7	43.8	43.9	31.0	8.6	7.4	..	..	1989	%	
13.3	44.9	43.8	32.1	6.9	6.1	..	..	1990	%	
54.8	64.6	67.4	71.8	64.6	65.2	..	..	1989	%	49
55.2	65.6	67.8	70.7	65.8	64.2	..	..	1990	%	
46.9	49.4	55.4	61.1	48.3	50.2	..	..	1989	%	50
46.5	50.6	56.3	58.9	47.2	52.0	..	..	1990	%	
572	817	113	101	238	287	..	..	1989	'000	51
613	910	112	112	261	290	..	..	1990	'000	
22.8	24.0	29.5	28.2	27.5	24.1	..	..	1989	%	52
24.2	26.2	28.9	31.3	30.0	23.9	..	..	1990	%	
20	20	23	23	22	23	..	..	1988	%	53
20	21	21	22	21	22	..	..	1989	%	

See notes at end of table.

Key labour and income facts

No.	Unit	Year	Canada	Nfld.	P.E.I.	N.S.	N.B.
*54 Economic dependency profile							
Transfer payments:							
Amount	\$ million	1988	45,430	1,264	279	1,737	1,501
Employment Income	\$ million	1988	296,171	4,206	1,003	8,209	6,061
Economic Dependency Ratio (EDR)	%	1988	15.34	30.05	27.86	21.16	24.76
Canadian Index	%	1988	100.0	195.9	181.6	137.9	161.4
Unemployment insurance benefits:							
Amount	\$ million	1988	9,999	715	130	495	585
Contribution to EDR	%	1988	3.38	16.99	12.97	6.04	9.65
Family allowance benefits:							
Amount	\$ million	1988	2,454	64	13	85	72
Contribution to EDR	%	1988	0.83	1.53	1.33	1.03	1.19
Federal sales tax credits:							
Amount	\$ million	1988	388	12	2	15	13
Contribution to EDR	%	1988	0.13	0.28	0.21	0.18	0.22
Child tax credit benefits:							
Amount	\$ million	1988	1,976	67	14	79	71
Contribution to EDR	%	1988	0.67	1.60	1.36	0.96	1.18
Old age security benefits:							
Amount	\$ million	1988	7,469	122	34	243	195
Contribution to EDR	%	1988	2.52	2.90	3.40	2.96	3.21
CPP/QPP benefits:							
Amount	\$ million	1988	9,236	131	36	325	235
Contribution to EDR	%	1988	3.12	3.12	3.58	3.96	3.88
Other pension benefits:							
Amount	\$ million	1988	13,909	152	50	495	329
Contribution to EDR	%	1988	4.70	3.62	4.99	6.03	5.43

Key labour and income facts

Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Year	Unit No.
54									
11,226	16,121	1,999	1,665	3,505	6,055	34	45	1988	\$ million
68,989	125,997	10,485	8,744	27,771	33,713	340	653	1988	\$ million
16.27	12.79	19.07	19.04	12.62	17.96	10.06	6.90	1988	%
106.1	83.4	124.3	124.1	82.3	117.1	65.6	45.0	1988	%
3,146	2,193	334	283	767	1,315	18	19	1988	\$ million
4.56	1.74	3.18	3.23	2.76	3.90	5.22	2.91	1988	%
603	868	109	108	250	272	3	7	1988	\$ million
0.87	0.69	1.04	1.23	0.90	0.81	0.78	1.13	1988	%
111	120	22	17	33	43	--	1	1988	\$ million
0.16	0.10	0.21	0.19	0.12	0.13	0.08	0.11	1988	%
522	574	105	110	207	217	2	7	1988	\$ million
0.76	0.46	1.00	1.26	0.75	0.64	0.59	1.06	1988	%
1,767	2,826	439	327	506	1,007	2	2	1988	\$ million
2.56	2.24	4.18	3.74	1.82	2.99	0.58	0.35	1988	%
2,229	3,692	422	348	629	1,183	3	2	1988	\$ million
3.23	2.93	4.03	3.98	2.26	3.51	0.91	0.35	1988	%
2,848	5,847	570	472	1,113	2,020	6	6	1988	\$ million
4.13	4.64	5.43	5.40	4.01	5.99	1.90	0.98	1988	%

Key labour and income facts

Notes and definitions

No.

- 1 Persons aged 15 and over who are employed or unemployed.
- 2 Labour force as a proportion of the population aged 15 and over.
- 4 Persons who usually work less than 30 hours per week.
- 7 Unemployed as a proportion of the labour force.
- 8 This rate, and rates shown as Indicators 9 and 10, are described in *The Labour Force* (71-001), February 1987.
- 9 The full-time labour force includes persons working full-time, those working part-time involuntarily and unemployed persons seeking full-time work.

The part-time labour force includes persons working part-time voluntarily and unemployed persons seeking part-time work.

On the margins of the labour force includes persons not looking for work because they believe none is available or because they are waiting for recall or for replies from employers.
- 10 The rate shows hours lost through unemployment (unemployed multiplied by average actual weekly hours) and through underemployment (that is, short-time work schedules and involuntary part-time employment) as a proportion of hours worked plus hours lost.

No.

- 30 Data are for agreements involving bargaining units of 500 or more employees. Canada figures include workers covered by federal labour legislation plus agreements involving workers in more than one province.
- 33 Labour income comprises gross wages and salaries (including directors' fees, bonuses, commissions, gratuities, taxable allowances and retroactive pay) and supplementary labour income (payments made by employers for the benefit of employees, including contributions to health and welfare schemes, pension plans, workers' compensation and unemployment insurance).
- 34 Labour income per employee is calculated using LFS estimates of paid workers excluding those absent without pay.
- 44 For an explanation of the methodology underlying the low income cut-off, see *Income Distributions by Size in Canada* (13-207).
- 54 Data are derived from tax returns filed in the spring of the year following the reference year. The mailing address at the time of filing determines the province.

In the works

Here are some of the topics to be featured in upcoming issues of Perspectives on Labour and Income.

■ **Computers in the workplace**

From the office to the shop floors, computers are radically changing the work environment. This article provides an overview of how integral computers are to present day business.

■ **Census special: Historical facts; Income trends; Visible minorities**

June 4, 1991, is Census Day. As the day approaches, we thought it fitting to look back at data from previous censuses.

■ **Women on the verge of retirement**

Statistics show that upon retirement women now participating in the labour market might not face the same economic hardships that many female seniors have had.

■ **Early retirement: Option or fate?**

More and more workers are taking early retirement. This article looks at financial incentives to leave the work force (improved government and private pensions, RRSPs, etc.) and the living standards these retirees might have.

■ **Looking after the kids**

With the increased participation of women in the labour force, the problems of child care will continue to be a major social issue. A look at results from a recent survey.

■ **Unemployed by occupation**

Despite good or bad economic times, occupation affects one's chances of becoming unemployed.

■ **Single-industry towns**

Many remote communities depend upon one main industry, such as fishing, forestry or mining. This study will examine a group of selected single-industry towns over the 1971 to 1986 period.

■ **Canada/United States income comparisons**

This study offers a look at various income topics such as relative income shares, wives' contribution to family income and the male/female earnings ratios in these two countries.

■ **Dependence on government transfers**

In 1988, the federal government spent more than \$49 billion on social security programs, an increase of 166% since 1971.

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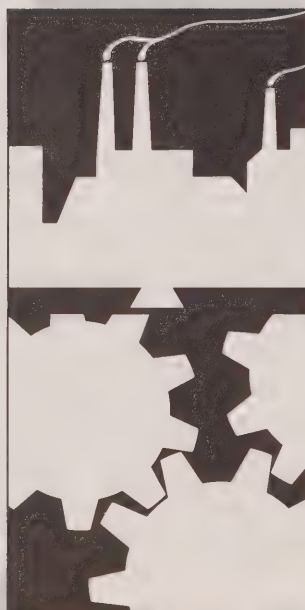
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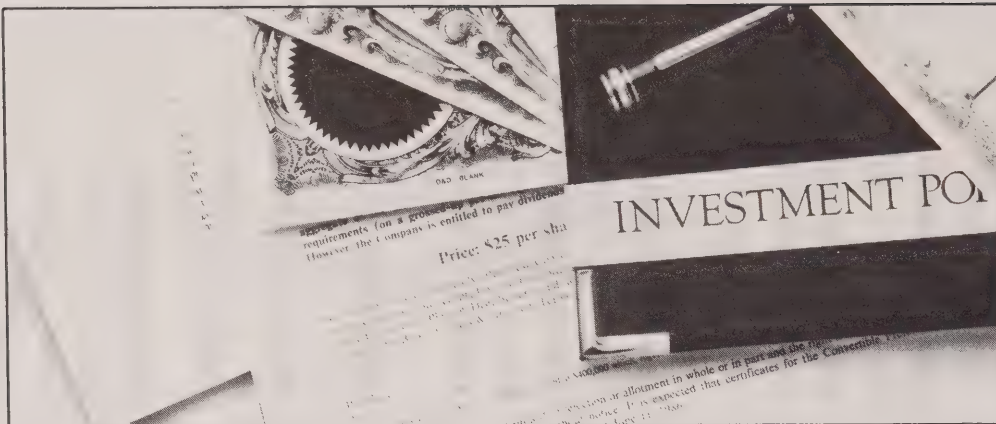
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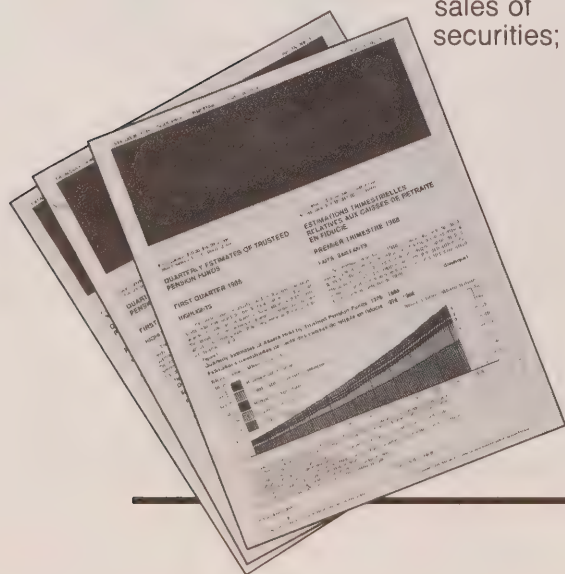
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ON LABOUR AND INCOME

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- 17 **Visible minorities in the Canadian labour force**
Michel G. Côté
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- 27 ✓ **Women's earnings and family incomes**
Abdul Rashid
Over the last 20 years, the increasing participation of women in the labour force has been one of the most significant changes in Canada. With that in mind, the author draws on data from previous censuses to review changes in women's earnings and work patterns, and the consequent impact on family incomes.
- 38 **Computers in the workplace**
Graham S. Lowe
Focusing primarily on office automation, this article details the presence of computers at work and how Canadian workers are affected by increased automation. Attitudes to computers at work are also examined.

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ON LABOUR AND INCOME

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51 Dependence on government transfer payments, 1971-1989

Raj K. Chawla

In 1989, all levels of government transferred over \$75 billion to persons under various income security programs. The article examines who benefits from these payments, whether families have become more dependent on such payments over the past two decades and if they alleviate financial hardship.

68 Who's looking after the kids? Child care arrangements of working mothers

Susan Crompton

When the National Child Care Survey was carried out in the fall of 1988, one of its goals was to provide comprehensive, current data on child care arrangements. This article focuses on several important aspects of sitter and day care.

Symbols

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Forum

From the editor

■ In a little less than three weeks, on June 4, Canada will be mobilized in the greatest single concentration of activity in five years. I am speaking, of course, of the Census of Canada, a quinquennial event whose results provide more hard facts about this country than anything else.

For over 100 years, the census has told us more about ourselves than any other single source of information. And can it be coincidence that its subject matter has been so consistent over the years? Our vision today of what constitutes the national well-being remains much what it was in the early days of the Dominion, as shown in author Patricia Grainger's article on "The census: One hundred years ago". The issues that were important in the third national Census of 1891 are mirrored in the questionnaire that Canadians will be asked to complete just a few weeks from now: population growth, immigration, family, housing, education, work, industrial development.

Since the basic function of government – to optimize present conditions and plan for the future – does not really change from decade to decade, it is understandable that much of the information it requires does not change either. But is that same information useful to business? If business has the same basic function as governments do, then the answer is "Yes".

The census is incomparable in its capacity to provide detailed data about Canadians and Canadian households. And a

major subset of this database is information on the Canadian labour market. For profiles of the people employed in different occupations, the census is unparalleled. Nowhere else could you discover that, in 1985, 43% of the 4,525 "private police agents and investigators" working in Canada had postsecondary qualifications; over two-thirds of them were graduates of social sciences, commerce management and business administration, and engineering and applied science technologies. Contrary to the stereotype, 92% of these private eyes were paid workers, and the average income of those who worked full time, full year in 1985 was almost \$30,000.

For information about the work force in an industry, the census is again unrivalled. Only the 1986 Census can tell you that the gambling industry employed 7,085 people: 61% of them were women, 35% were between 15 and 24 years old, and only 54% worked full time in 1985. In contrast, in the construction project management industry, women accounted for 22% of the 4,400 workers, the median age was about 39 years for men and 35 for women, and about 85% of the workers were employed full time in 1985.

Two articles in this issue of *Perspectives*, specially commissioned to illustrate the analytical value of the census, address important labour market issues that can only be fully explored using census data. In his article "Visible minorities in the Canadian labour force," Michel Côté demonstrates how the census database can

be manipulated to examine special subgroups of the population. In this case, the census is the only source of data from which a profile of working Canadians in these communities can be developed.

And in "Women's earnings and family incomes", Abdul Rashid examines women's employment and its impact on family incomes in the nation as a whole. He notes that family incomes may grow more dramatically in the future if the 57% of wives now working part year or part time begin switching to full-year, full-time employment. Only the census can reveal the corresponding changes for the smallest provinces and individual municipalities.

How useful is the census to business? To put the question in a business context, does it sell? Sales of products and services from the 1986 Census have reached almost \$11 million, and they're still climbing. The private sector has spent \$4.2 million on publications, \$5.2 million on custom tabulations, over \$800,000 on direct on-line electronic data, and over \$640,000 on requests for highly specialized products. (The preceding amounts are based on the most recent figures available before going to print.)

It is because the census provides such a unique and variegated richness of detail that Statistics Canada organizes a major promotional campaign to persuade every Canadian to "Count Yourself In".

Ian Macredie
Editor-in-Chief

□

Letters

■ Dear Editor:

The Spring issue of *Perspectives* contains an article entitled "Apprentices: Graduate and drop-out labour market performances" by Ernest B. Akyeamong that is seriously flawed.

Regrettably, the author used data from a survey on apprentices and apprenticeship programs in Canada that was not designed to calculate precise drop-out rate. In fact, the "Survey Methodology Report" stated explicitly that the data should not be used for such purposes. It is our opinion that this error was compounded by faulty calculations and analysis. The resulting conclusions cannot be justified.

These errors are especially unfortunate because they concern education programs which are within provincial jurisdiction. I hope that Statistics Canada's premier publication will be more attentive to such considerations in the future.

Sincerely,

Don W. Bell
Chairman
Canadian Council of
Directors of Apprenticeship

□

Highlights

Here are some key findings from the articles in this issue of Perspectives on Labour and Income.

The census: One hundred years ago

■ According to the Census of 1891, Canada's population totalled just under 5 million. In contrast, the Census of 1991 will show a population of more than 26 million.

■ In 1891, primary industries formed the central core of the economy as almost half of all workers were employed in occupations related to agriculture, fishing, and mining. In 1986, only 6% of workers were employed in the primary industries while one out of three was employed in community, business and personal services.

■ The 1891 Census reported that 13% of Canadians were foreign born, with 75% of immigrants coming from the United Kingdom. In 1986, immigrants made up 16% of the population. About 20% were from the United Kingdom, 18% from Asian countries and 10% from Italy.

■ In 1891, 80% of the adult population reported that they could both read and write. According to a recent survey on literacy, one in six adult Canadians is unable to deal with most everyday reading requirements.

Visible minorities in the Canadian labour force

■ Although visible minorities made up only 6% of the work force in 1986, their presence across the country varied from less than 1% in Newfoundland to more than 10% in British Columbia.

■ In major metropolitan areas such as Toronto and Vancouver, visible minorities accounted for one in six labour force participants. Indeed, 90% of visible minorities lived in Canada's 25 census metropolitan areas.

■ In 1986 visible minorities as a group were more likely than other Canadians to be in the labour force, either as workers or job seekers (72% compared with 66%).

■ Visible minorities had higher levels of education: 60% had some education beyond high school compared with just over 50% of other Canadians.

■ Visible minorities were overrepresented in several major occupation groups including product fabricating, engineering and mathematics, and medicine and health.

Women's earnings and family incomes

■ Between 1970 and 1985, the number of female earners increased much faster (71%) than their population (32%). For men, the

opposite was true (22% versus 29%). Consequently, women made up 44% of all earners in 1985, up from 35% in 1970.

■ During this period, the annual rate of increase in the average earnings of women (1.8%) was twice the rate for men (0.9%).

■ As a result of increasing numbers of women with stable attachment to the labour force, the age-earnings profile for women is becoming more like that of men, reflecting the impact of increasing work experience.

■ Over the 15-year period, the proportion of working wives increased from 46% to 67%, so that dual-earner families have become the norm rather than the exception.

■ Without the contribution of working wives, the effects of the 1981-82 recession would have been more severe on family income.

Computers in the workplace

■ According to the General Social Survey conducted in February 1989, one-third of employed persons (4.3 million) responded that they used mainframes, personal computers or word processors in their jobs. Over 40% of workers aged 25 to 44 used computers at work.

■ More education increased the likelihood of working with a computer: about 55% of university graduates used computers at work compared with 12% of those with less than a high school diploma.

■ Computer users spent an average of 16.2 hours a week at their machines. Those in mathematics, statistics, systems analysis and related occupations usually had about 31 hours of computer use weekly. Following close behind with 29 hours were office

machine and electronic data processing operators.

■ When asked to what degree their work had been affected by the recent introduction of computers or automated technology, about 4 in 10 persons reported no effects at all while one-third said that their work had been greatly affected.

■ Among those who said computers had affected their work, two-thirds reported that computers and automation had resulted in increased job skills. Almost none reported a decrease in job skills.

■ The impact of automation on the intrinsic interest of work was positive as well: fully 60% of the employees affected by automation reported that it had made their duties more interesting.

Dependence on government transfer payments, 1971-1989

■ In 1989, government transfer payments to persons totalled \$75.9 billion, an increase of 156% in constant dollars since 1971.

■ In both 1971 and 1989, about 15% of all unattached individuals and 4% to 5% of all families depended on government transfer payments as their sole source of income.

■ Transfer payments accounted for 18% of the total income of unattached individuals in 1989 compared with 10% in 1971. Transfer payments to families accounted for 10% of their total income in 1989, up from 6% in 1971.

■ Half of the increase can be explained by programs created after 1971 (such as the Child Tax Credits) or changes in program administration. Demographic shifts explained the remaining changes.

■ With the maturing of the Canada and Quebec Pension Plans, payments from the two made up 22% of total transfers in 1989 compared with only 4% in 1971.

Who's looking after the kids? Child care arrangements of working mothers

■ In 1988, there were 2.7 million families with children under the age of 13. Over half of these families (56%) had mothers working outside the home and most of them (70%) were employed full time.

■ Approximately 814,000 working mothers left at least one of their children in the care of a sitter, while 128,000 placed their children in a day care centre. The majority of mothers using day care (57%) had parental incomes between \$20,001 and \$60,000.

■ Over 1 million children under the age of 13 were looked after by a sitter while their mothers were at work. A further 140,000 children were in day care centres.

■ Children who were looked after by sitters spent an average of 20 hours per week in their care. In contrast, children at day care centres spent, on average, 31 hours per week.

■ For 40% of children with sitter care, the sitter was a relative, often a grandparent. Of the children in day care, 47% were in privately run centres.

■ The majority of mothers were generally satisfied with the quality of care their children were receiving. □

The census: One hundred years ago

Patricia Grainger

The primary function of the decennial census, as described in the British North America Act of 1867, was to provide a headcount of the population so that seats in the House of Commons could be allocated and the boundaries of federal electoral districts could be set. But the census quickly became more than just a tool for determining political representation; it became a vehicle whereby the government of the day could observe and measure various aspects of a number of social and economic issues. The census has remained a unique yardstick for measuring Canada's development.

National Censuses were undertaken in 1871 and 1881. Interest in the population of the country's western regions led to a census of the three provisional districts of the Northwest Territories (that is, the southern portions of present-day Saskatchewan and Alberta) in 1885 and another of Manitoba in 1886 (see map).

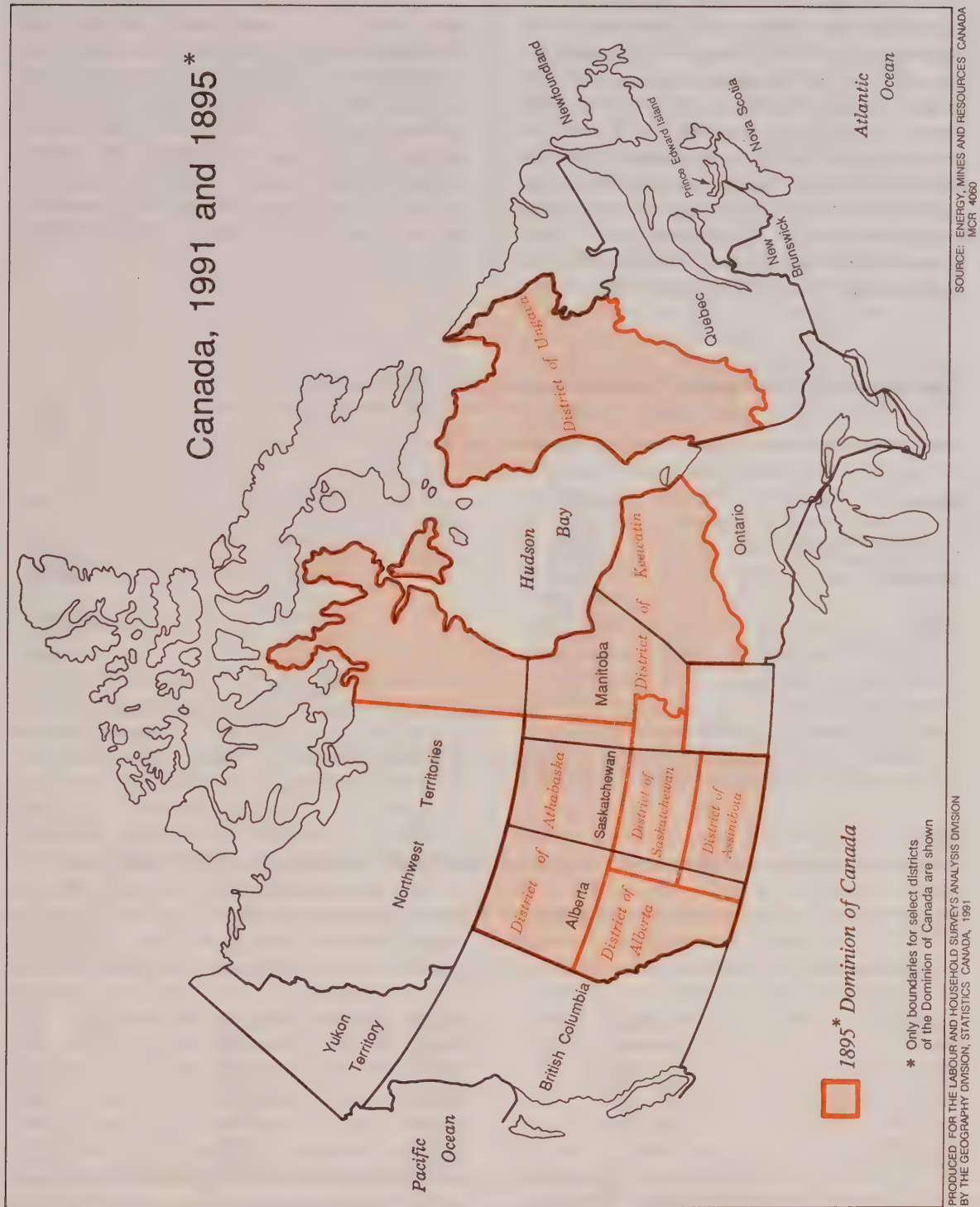
On April 5, 1891, enumerators visited dwellings across the nation to count a population of 4,833,239. For the first time in Canada, the 1891 Census used punched card equipment to assist in tabulating the data. Eleven electrical tabulating machines were rented and a commission was paid to

H. Hollerith, their American builder.¹ The Census was conducted at a cost of \$550,000 or 11 cents per capita (1891 dollars).² It seems astonishing that such a volume of information could be collected, tabulated and published so quickly without the "convenience" of motor transport or modern communication systems.³

Population growth

The growth and geographic distribution of the population have always been vital issues in Canada. At Confederation, the population was concentrated in the southern parts of Ontario and Quebec, in pockets in the Maritimes and in the southern part of what is now British Columbia. Between 1871 and 1881, Canada's population grew by slightly more than 17%. The 1891 Census showed a more modest growth of just under 12%. Although most of the growth was in Ontario and Quebec, there were remarkable increases in Manitoba, British Columbia and the Territories. Today, Canada's population continues to grow, albeit at a reduced rate. While it is expected that the 1991 Census will show modest growth, it must be remembered that Canada has experienced only two periods of very rapid population increase; namely, during the first two decades of the century and in the post-war baby boom years (see *Net migration*).

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The Census of 1881 reported record population increases in the West, mostly in Manitoba. The 1871 Census had found 241 people living in Winnipeg in an area of 11.8 square miles. Ten years later, Winnipeg covered 393 square miles and had a population of 7,985, an increase of over 30 times. This was by far the largest increase of any city or town with a population of over 5,000. According to the Census of 1986, Winnipeg had a population of 625,000 and covered more than 1,150 square miles.

Between 1881 and 1891, the populations of Toronto and Montreal had increased numerically more than any other urban centre, but Winnipeg, Vancouver, Victoria and New Westminster were also growing quickly. Currently, the census metropolitan areas of Toronto, Winnipeg, Vancouver, Victoria and Montreal are all still growing, although Montreal grew at a slower rate than the others between 1981 and 1986.

Table 1
Population of Canada and the provinces in 1871, 1881 and 1891

	1871	1881	1891
Canada	3,689,257	4,324,810	4,833,239
British Columbia	36,247	49,459	98,173
The Territories*	18,000	25,515	66,799
Manitoba	25,228	62,260	152,506
Ontario	1,620,851	1,926,922	2,114,321
Quebec	1,191,516	1,359,027	1,488,535
New Brunswick	285,594	321,233	321,263
Nova Scotia	387,800	440,572	450,396
Prince Edward Island	94,021	108,891	109,078
Unorganized Territories**	30,000	30,931	32,168

Source: *Census of Canada, 1891, Volume I, Table VI*

* Includes the districts of Alberta, Assiniboia, Athabaska, and Saskatchewan.

** Includes the Northwest Territories and the district of Keewatin.

Table 2
Population of cities and towns having more than 5,000 inhabitants in 1871, 1881 and 1891

Population	1871	1881	1891	% change 1881-1891
Montreal	107,225	155,237	216,650	40
Toronto	56,092	96,196	181,220	88
Ottawa	21,545	31,307	44,154	41
Halifax	29,582	36,100	38,556	7
Winnipeg	241	7,985	25,642	221
Victoria	3,270	5,925	16,841	184
Vancouver	—	—	13,685	—
New Westminster	—	1,500	6,641	343

Source: *Census of Canada, 1891, Volume I, Table VII*

Net migration

In the years following Confederation, there were sizeable movements of population into, within, and out of Canada. During this period, the number of people emigrating from Canada exceeded the number immigrating. Between 1881 and 1891, it is estimated that natural increase (the excess of births over deaths) accounted for a gain of 669,000 in the Canadian population. In the same period, approximately 903,000 persons immigrated to Canada while 1,108,000 emigrated from Canada; that is, net migration was a loss of 205,000 persons. During this decade, Manitoba, British Columbia and the Northwest Territories were the only provinces where immigration surpassed emigration.⁴

Many emigrants went to the United States. It has been estimated that "in 1880-90, the number of natives of Canada in the United States grew from 717,000 to 980,000. Canada, with its four million people and its millions of vacant acres had contributed more of its sons to the building of the United States than England with its 29 millions in their crowded land".⁵

Net migration did not become positive until the years 1901 to 1911. In fact, this was the only decade in Canadian history when net migration surpassed natural increase as a contributor to overall population growth.⁶

Industry

In spite of periods of economic slow-down in the 1870s⁷ and the mid-1880s,⁸ the Canadian economy continued to expand. The railways, manufacturing and agriculture sectors predominated. The development of manufacturing industries was widespread – although growth was fastest in southern Quebec and Ontario, where a market already existed. The expanding network of railways further developed these markets; industry spread to smaller centres where cheap labour was available from family farms.

Agriculture was the dominant factor in the early development of the West. However, natural and economic hardships such as grasshoppers, drought and bitterly cold winters, caused many Canadians to head south to the more prosperous and less climatically harsh regions of the northern United States. Today, even with the

development of grain more suited to the limited growing season, Canadian farmers continue to be plagued by an unpredictable climate.

Overall, the structure of the Canadian economy has changed dramatically from that of 100 years ago. In 1891, almost half of the population were employed in occupations related to agriculture, fishing and mining, 20% were employed in manufacturing occupations, 15% were in domestic and personal services, and a further 12% were in occupations related to trade and transportation. The 1986 Census showed approximately 6% in agriculture, fishing and mining, 17% in manufacturing industries, almost 40% in service industries and about 22% in trade and transportation.⁹ The largest recent employment increases have been in the service sector, particularly in community, business and personal service industries; these industries currently account for one in every three Canadian workers.

One hundred years ago, the census was the sole source of information about the development and expansion of industrial sectors. In 1894, a 400-page volume of detailed industrial data could be purchased for 25 cents. It showed that, by 1891, the services of blacksmithing and meat curing shops and the production of staples such as lumber, saddles and harnesses, boots and shoes, cheese and carriages were to be found in all provinces. Candle- and soap-making companies and breweries were located everywhere except the Territories. Production of more luxurious items, such as chocolate and cocoa, lace, parasols, and plumes, occurred only in the more populated areas of Ontario and Quebec.

Regional differences were apparent as well. Fish canning was found in the Maritimes, Quebec and British Columbia. Opium factories were located only in British Columbia, moss factories were exclusive to Nova Scotia, and vermicelli and macaroni

factories were unique to Quebec. Today, opium and moss factories no longer exist while macaroni producers employ relatively few people and are classified together with all types of manufacturers of dry pasta products. Regional differences still persist in the Canadian economy and are evident using census data. In fact, the census is the sole source of detailed industry employment data for sub-provincial areas.

The modern census asks respondents to state for whom and where they work. In contrast, the Census of 1891 obtained data directly from businesses. Thus, it was able to provide details about the number of establishments engaged in a certain activity, the value of the capital they owned, the number of employees and the amount paid to them in wages and salaries, as well as the value of the output produced. The Dominion Statistician conceded that "many and very great difficulties surround the effort to take [stock of] the industrial establishments of Canada"¹⁰ and stated that this data had to be recorded so that "the people of Canada may be able to look back upon the period of 'small and feeble things' and [see] from what humble beginnings the industrial life of the country sprang".¹¹

Occupations

Expanding manufacturing activities brought about increased public interest in working conditions. The 1887 factory safety laws, primarily intended to discourage the employment of women and children, were not well enforced. Governments did little to remedy long hours, unsafe machinery and harsh factory discipline.¹² Increasing mechanization and union control over hiring and limits on the output of individuals were topical issues.¹³

The 1891 Census showed that 25% of males aged 10 to 14 and 2% of females aged 10 to 14 stated an occupation. Among males under 15 who reported an occupation, 87%

said they were farmers' sons. However, there were also 294 miners, 293 cotton mill operatives, 156 saw and planing mill employees, 163 clerks and copyists and 689 messenger, errand and office boys. Females under 15 generally reported themselves as servants, although there were also 237 dressmakers and dressmaker apprentices, 89 boot and shoe makers, 192 cotton mill operatives and 156 seamstresses. Following international conventions and given contemporary school leaving and child labour laws, the census no longer collects occupation data from persons under 15 years of age.

In August 1893, the census published a bulletin providing more detail about occupations.¹⁴ As the population reporting an occupation had increased more rapidly than the total population, Canadians were described as being "a busier, more 'hustling' people than [they] were in 1881".¹⁵ The report concluded "that the domestic and personal service class" and the commercial class were at an appropriate size, that there was room for many more in the professional class and the industrial class and finally, that the agricultural class, especially in the older provinces, could "stand a good deal of depletion before being unduly reduced".¹⁶

Particular attention was paid to physicians and surgeons of whom, in 1891, there were 4,448 or 1 to every 1,078 persons. The report noted: "On the whole, however, considering the healthy climate and the comparatively simple life led, with a large proportion of the people engaged in occupations that would not come under the definition of hazardous or extra-hazardous, the garrison of medical men is ample for the wants of the country, especially as the returns show 1,326 medical students preparing to become part of the guard watching over the health of the people."¹⁷ Almost 100 years later, the 1986 Census estimated 48,600 physicians and surgeons or 1 for every 514 people in Canada.

Immigration, education and religion

The 1891 Census found that about 650,000 or over 13% of Canadians were foreign born; most (75%) were from the United Kingdom. About one in eight was born in the United States.

Immigrants today make up only a slightly greater percentage of the Canadian population; according to the 1986 Census, 16% were foreign born. About 20% of these immigrants were from the United Kingdom, while a further 18% were from Asian countries. Immigrants from Italy made up another 10%.

Education seemed to have been of particular concern to the government a century ago. Through the latter part of the nineteenth century, the census asked all persons whether they were able to read and write. In 1891, 80% of the adult population (15 years and over) reported that they could both read and write.

The census has not asked about literacy since early in the century, but a recent survey has shown that "about 16% of adult Canadians are unable to deal with most everyday reading requirements. Another 22% have reading skills too limited to deal effectively with unfamiliar written material".¹⁸ In other words, things may have changed less in this regard in the past century than most people would suspect.

The Censuses of 1871, 1881 and 1891 contained a question on religion. According to the 1891 Census, 41% of Canadians were Roman Catholic, 17% were Methodist, 16% were Presbyterian and slightly more than 13% belonged to the Church of England. Regional differences were evident. In Quebec, for example, 87% were Roman Catholic compared with only 13% in

Manitoba. In the Territories, 37,000 persons (38%) did not state a religion, by far the highest proportion of anywhere in the country.

The 1991 Census will again include a question on religion, the first since 1981. At that time, 47% of the population reported their religion as Catholic. The United Church, which was formed from a merger of the Methodist Church and large parts of the Presbyterian and Congregational Churches, made up 16%, followed by Anglican at 10%.

Living conditions

The census played a major role in understanding the housing conditions of the population. In 1891, information was available on the construction materials used in dwellings, and the number of storeys and rooms. In 1891, wood was used for more than 95% of the houses in British Columbia, Manitoba, New Brunswick, Nova Scotia, Prince Edward Island and the Territories. In Ontario and Quebec, only three-quarters of houses were wood construction; the rest were brick or, less commonly, stone. More than half of the population in Ontario lived in houses with 6 to 10 rooms. Approximately the same percentage of persons in the Territories lived in houses with 1, 2 or 3 rooms.

Although the census no longer asks a question on construction materials or the number of storeys, its role in measuring housing conditions has not been reduced. The 1991 questionnaire will gather information on the number of rooms, the period of construction, the need for repairs, the number of bedrooms and the costs of utility, rent and mortgage payments. The 1986 Census estimated that the average size of a Canadian dwelling was 5.8 rooms.

Table 3
Proportion of homes by construction material in 1891

	Wood	Brick	Stone	Undescribed
Canada	81.5	15.4	3.0	0.1
British Columbia	97.6	2.3	0.1	—
The Territories*	96.0	1.0	1.0	2.0
Manitoba	95.2	3.7	0.9	0.2
Ontario	75.5	21.1	3.3	0.1
Quebec	77.1	17.8	5.0	0.1
New Brunswick	98.2	1.6	0.1	0.1
Nova Scotia	99.4	0.3	0.2	0.1
Prince Edward Island	99.5	0.4	0.1	—

Source: *Census of Canada, 1891, Volume IV, Table A*

* Includes the districts of Alberta, Assiniboia, Athabaska, and Saskatchewan.

Women's issues

Interest was developing in women's issues as well at the end of the last century. Although the movement for women's suffrage was not well under way until about 1910, Dr. Emily Stowe, Canada's first woman doctor, launched a campaign in the 1890s.

The census provided separate occupation estimates for women for the first time in 1891. The largest occupation for women over 15 was that of servant, although there were also large numbers of dress-makers, teachers, "tailoresses", and even 11,000 farmers. In addition, there were 69 cabinet and furniture makers, 374 compositors and pressmen, 39 harness and saddle makers and repairers, 70 iron and steel workers, 135 photographers, 12 piano makers, 1 chemist, 11 dentists, 76 physicians and surgeons, and 76 hucksters and pedlars.

Currently, women tend to be concentrated in occupations related to clerical activities, sales, service, and medicine and health. However, census data also illustrate the increasing participation of women in occupations, such as management, law, and accounting, that have traditionally been

dominated by men.¹⁹ Because the census permits the examination of specific occupations by age, it is possible to measure the rate at which young women are entering these non-traditional occupations. The 1986 Census showed, for example, that women made up 25% of dentists under the age of 35, but only 5% of those over the age of 45.

During the 1890s, people also began to notice wage differentials between men and women. Although no data on earnings were available from the census until 1901, the issue had become sufficiently important for a lengthy discussion to be included by the census in the 1901 publication. Sentiment of the period was expressed in claims that "the natural vocation for woman ... is that of wife and mother and manager of a household; and therefore she ought not be encouraged to come into competition with man in every other occupation, and so with her cheaper and less efficient service make it harder for [a] man to get employment at a living wage".²⁰ Interest in wage comparisons remains high; one of the most frequently requested items from the 1986 Census was data showing earnings of males and females by occupation.

Conclusion

One hundred years ago, Canadians were concerned about topics such as population growth and immigration, industrial development, education, and the role of women. Over the century, the specific problems have changed. As well, the nature of public opinion and the perspective from which these issues are viewed may be very

different today. Nevertheless, it is interesting that these same subjects remain topical.

The Census of 1891 helped both the government and the public of the time to gain a better understanding of such issues by providing vital social and economic data. Like its counterpart from a century past, the Census of 1991 will be an important tool for shedding light on these critical issues. □

Notes

¹ D.A. Worton, "History of Statistics Canada project", p. 15.

² Dominion Bureau of Statistics, *First annual report of the Dominion Statistician, 1918-19*, p. 13.

³ The 1891 Census was conducted by George Johnson, who was named the first Dominion Statistician in the same year. In the introduction to the first volume of published 1891 Census information, Johnson describes the quality of the data in the following way: "No pains have been spared to obtain the information necessary for the execution of so important a work as this, which is in no respect inferior as regards exactitude to works of a similar kind published in any other country. It cannot be expected that so extensive a work should be absolutely perfect. That would be to ask what is simply impossible. All that fairly can be required is the relative exactitude which has been secured in the present Census."

⁴ See M.C. Urquhart and K.A.H. Buckley eds., *Historical statistics of Canada* (1965).

⁵ See A. Shortt and A.G. Doughty, eds., *Canada and its provinces: a history of the Canadian people and their institutions*, p. 148.

⁶ Urquhart and Buckley, loc. cit.

⁷ Shortt and Doughty, op. cit., p. 152.

⁸ D. Morton, *A short history of Canada*, p. 96.

⁹ The industry data are not strictly comparable. The 1891 data are based on the responses to the occupation question. These responses were subsequently reorga-

nized into groups which, in name, bear some similarity to the organization in our present-day industrial structure.

¹⁰ Department of Agriculture, *Census of Canada, 1890-91*, Vol. III, p. vi.

¹¹ Ibid.

¹² Morton, op. cit., p. 94.

¹³ B. Hodgins and R. Page, *Canadian history since Confederation: essays and interpretations*, p. 218.

¹⁴ Census employees of 1891 took great care in warning users of the dangers of making comparisons with the 1881 occupation data. Prudence was warranted because the classifications were not the same in all respects.

¹⁵ Department of Agriculture, *Census of Canada, 1891*, p. 3.

¹⁶ Selected passages from Department of Agriculture, op. cit., p. 15.

¹⁷ Ibid, p. 11.

¹⁸ Statistics Canada, *Perspectives on labour and income* (Winter 1990), p. 7.

¹⁹ See K.D. Hughes, *Perspectives on labour and income*, (Summer 1990), p. 58.

²⁰ Department of Agriculture, *Census of Canada, 1901*, p. xxiii.

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Visible minorities in the Canadian labour force

Michel G. Côté

In the latter half of the 1980s the federal government adopted a number of employment equity initiatives designed to address the labour market needs of four groups of Canadians: women, aboriginal peoples, persons with disabilities and visible minorities. In 1986, women accounted for 43% of the labour force, aboriginal peoples for 2%, persons with disabilities for 7%¹ and visible minorities for 6%.

This article presents a profile of the labour force characteristics of one of these designated groups, visible minorities, and compares it with that of other Canadians. The profile is based on results from the 1986 Census of Canada. For the purposes of federal employment equity programs, visible minorities are defined as the following 10 groups of Canadians, whether they were born in Canada or overseas: Blacks, Chinese, Filipinos, Indo-Pakistanis, Japanese, Koreans, Latin Americans, Other Pacific Islanders, South East Asians, and West Asians and Arabs (see *Definition of visible minorities*).

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Visible minorities are geographically concentrated

Viewed at the national level, visible minorities form only a small part of Canada's labour force. In 1986, out of a total of 13 million labour force participants, just 832,000 were part of a visible minority. But their presence varied considerably from province to province and city to city.

At one end of the country, in Newfoundland, less than 1% of the work force was composed of visible minorities, while in British Columbia the proportion was over 10%. In the census metropolitan areas of Toronto and Vancouver, the ratio was 1 out of every 6, whereas in Chicoutimi-Jonquière it was 1 out of 200. Some 70% of the visible minority work force was concentrated in Ontario and British Columbia, with more than half in the metropolitan areas of Toronto and Vancouver. In total, more than 90% of visible minorities lived and worked in the nation's 25 census metropolitan areas, compared with 62% of other Canadians.

There were an estimated 208,000 Chinese Canadians in the labour force in 1986, the most numerous of the 10 groups. Blacks, who numbered 193,000, were the next largest category, followed by Canadians

Table 1
Visible minorities in the labour force, 1986

	In the labour force	% of total labour force	% distribution
	'000		
Canada	831.5	6.4	100.0
Newfoundland	1.6	0.6	0.2
Prince Edward Island	0.7	1.0	0.1
Nova Scotia	11.4	2.7	1.4
New Brunswick	3.5	1.1	0.4
Quebec	111.0	3.5	13.4
Ontario	421.9	8.6	50.7
Manitoba	29.6	5.5	3.6
Saskatchewan	12.1	2.4	1.5
Alberta	84.9	6.6	10.2
British Columbia	153.9	10.4	18.5
Yukon	0.3	2.3	-
Northwest Territories	0.6	2.6	0.1
All census metropolitan areas	757.7	9.2	91.1
All other areas	73.7	1.5	8.9
Selected census metropolitan areas			
Halifax	7.5	4.6	0.9
Montreal	102.2	6.7	12.3
Ottawa-Hull	27.9	6.0	3.4
Toronto	326.3	16.5	39.2
Winnipeg	27.0	8.0	3.3
Calgary	37.4	9.5	4.5
Edmonton	36.8	8.4	4.4
Vancouver	123.0	16.2	14.8

Source: 1986 Census of Canada

Definition of visible minorities

This article is based on data from the 1986 Census of Canada. Visible minorities are defined according to criteria developed by the federal Interdepartmental Working Group on Employment Equity in order to meet the need for data on designated groups in Canada. Under the federal employment equity initiatives there are four designated groups: women, aboriginal peoples, persons with disabilities and visible minorities.

The main source of information used to identify people who are in a visible minority was the ethnic origin question (number 17) from the 1986 Census of Canada. This was supplemented with other cultural variables such as place of birth and mother tongue. As a result, the final counts in each of the groups may differ from those obtained directly from the ethnic origin question.

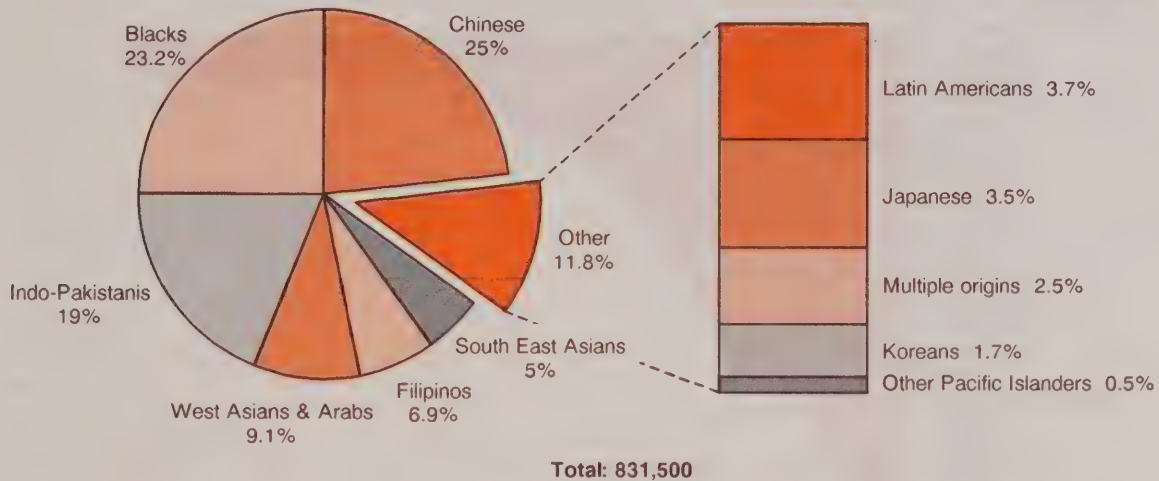
Ten visible minority groups were established: Blacks, Chinese, Filipinos, Indo-Pakistanis, Japanese, Koreans, Latin Americans, Other Pacific

Islanders, South East Asians, and West Asians and Arabs. An eleventh group was added for persons reporting more than one visible minority origin. These responses were counted separately to avoid giving preference to one group and to avoid counting individuals twice. For example, persons who reported being of both Chinese and Indo-Pakistani origin were assigned to the multiple origin category. Persons who reported both a visible and non-visible status were considered part of the appropriate visible minority group. For example, persons who reported Filipino and British ethnic origin were included in the Filipino group.

Further information and a detailed profile of the visible minorities can be found in *Profile of Visible Minorities and Aboriginal Peoples*, January 1990, available in print at a cost of \$95 from your local Statistics Canada Reference Centre. The profile is also available on either magnetic tape or diskette for \$250 through the Electronic Data Dissemination Division, Statistics Canada, R.H. Coats Building, 9th Floor, Ottawa, Ontario, K1A 0T6; (613) 951-8200.

Visible minorities in the labour force, 1986

Chinese, Black and Indo-Pakistani Canadians accounted for two-thirds of total visible minorities in the labour force.



Source: 1986 Census of Canada

Table 2
Selected socio-demographic characteristics of visible minorities in the labour force, 1986

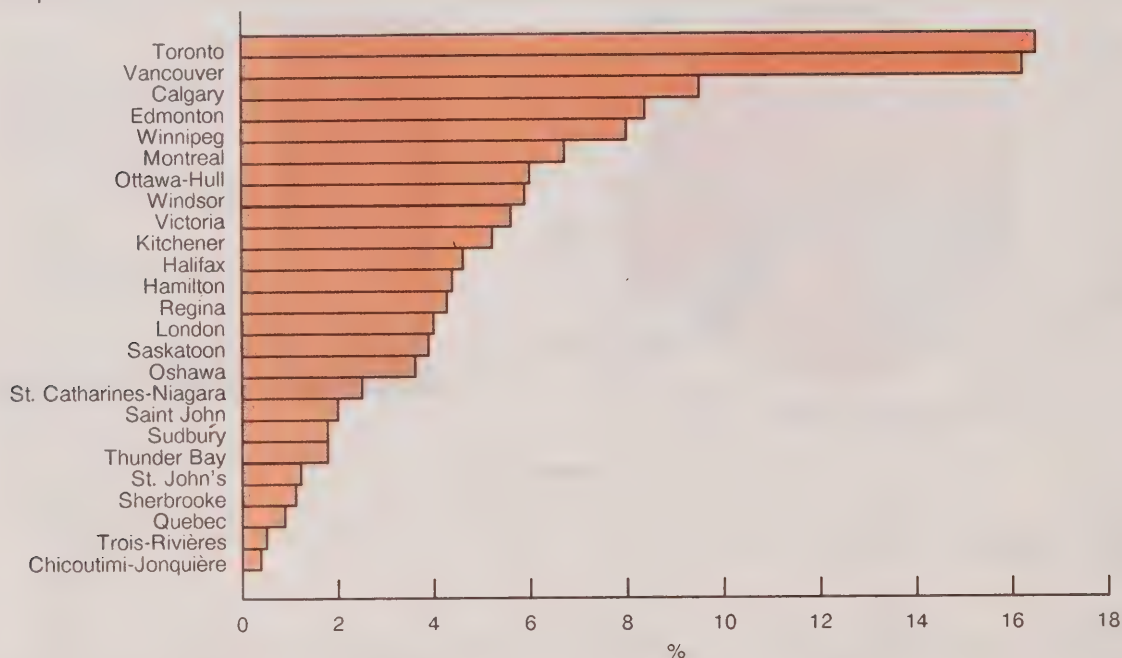
	Average age	Proportion				Immigrants		
		of women	with postsecondary schooling	with a university degree	who speak neither French nor English	Total	Average age at immigration	Average time in Canada
	years		%	%		%	years	
Total labour force	36	43	52	13	1	18	21	20
Visible minorities*	36	46	60	20	4	85	25	12
Single origin								
Chinese	36	46	57	23	11	83	25	12
Blacks	36	51	57	10	--	83	23	13
Indo-Pakistanis	36	42	63	25	3	96	25	12
West Asians and Arabs	36	36	64	27	1	77	25	13
Filipinos	37	58	76	33	--	98	27	10
South East Asians	32	40	47	15	8	94	25	7
Latin Americans	34	46	55	12	8	92	25	10
Japanese	39	43	67	23	1	24	25	16
Koreans	38	48	67	29	7	98	27	11
Other Pacific Islanders	34	44	40	4	1	88	22	12
Other Canadians	36	43	52	12	--	14	19	24

Source: 1986 Census of Canada

* Includes persons who reported belonging to more than one visible minority group.

Visible minorities as a proportion of the labour force of census metropolitan areas, 1986

The proportion of visible minorities ranges from over 16% in Toronto to less than 0.5% in Chicoutimi-Jonquière.



Source: 1986 Census of Canada

of Indo-Pakistani origin. These three comprised two-thirds of visible minorities in the labour force. The seven remaining groups ranged in size from 75,000, for West Asian and Arab Canadians, to 4,000, for Canadians who traced their origins to South Pacific islands other than the Philippines.

Visible minorities are more active in the labour market than other Canadians

Visible minorities as a group were more likely than other Canadians to be labour force participants (72% compared with 66%) and were more likely to be employed (64% compared with 59%). But their unemployment rate was also higher, registering 11% in May 1986, or 1 percentage point above the

rate for other Canadians. The average age of the visible minorities in the labour force (36) was the same as that of other labour market participants, though a larger proportion were aged 25 to 54. About 46% were women as opposed to 43% for the remainder of the labour force.

Of course, these general findings mask important variations among the groups. For example, 58% of Filipino Canadians in the labour force were women compared with only 36% of West Asian and Arab Canadians. The average age of South East Asians was 32, well below that of the Japanese who, at an average age of 39, were the oldest. Almost four-fifths of Canadians of Filipino origin were in the labour force and

Table 3
Selected labour and income characteristics of visible minorities, 1986

	In the labour force				Worked in 1985, full time, full year and reported employment income			Member of low- income economic family**	
	Partici- pation rate	Unem- ployment rate	Empley- ment- popula- tion ratio	Self- employed *	% of all who worked in 1985	Average employment income			
						Total	Men		Women
			%				\$	%	
Total	67	10	60	10	51	26,800	30,500	20,000	12
Visible minorities†	72	11	64	8	52	24,200	27,900	18,900	19
Chinese	70	8	64	11	54	24,100	27,600	18,900	15
Blacks	75	12	65	4	51	22,300	26,000	18,400	23
Indo-Pakistanis	74	12	65	8	51	26,500	30,300	19,200	15
West Asians and Arabs	69	12	61	16	51	27,600	30,700	20,200	21
Filipinos	79	7	74	2	55	22,200	25,500	19,700	14
South East Asians	68	16	57	4	47	19,900	22,100	16,000	32
Latin Americans	68	15	58	6	42	22,100	26,200	16,200	33
Japanese	71	6	67	12	53	30,300	34,200	23,400	8
Koreans	71	7	66	31	52	22,600	27,500	16,400	19
Other Pacific Islanders	72	13	63	5	46	20,600	23,300	16,500	24
Other Canadians	66	10	59	10	51	27,000	30,700	20,100	11

Source: 1986 Census of Canada

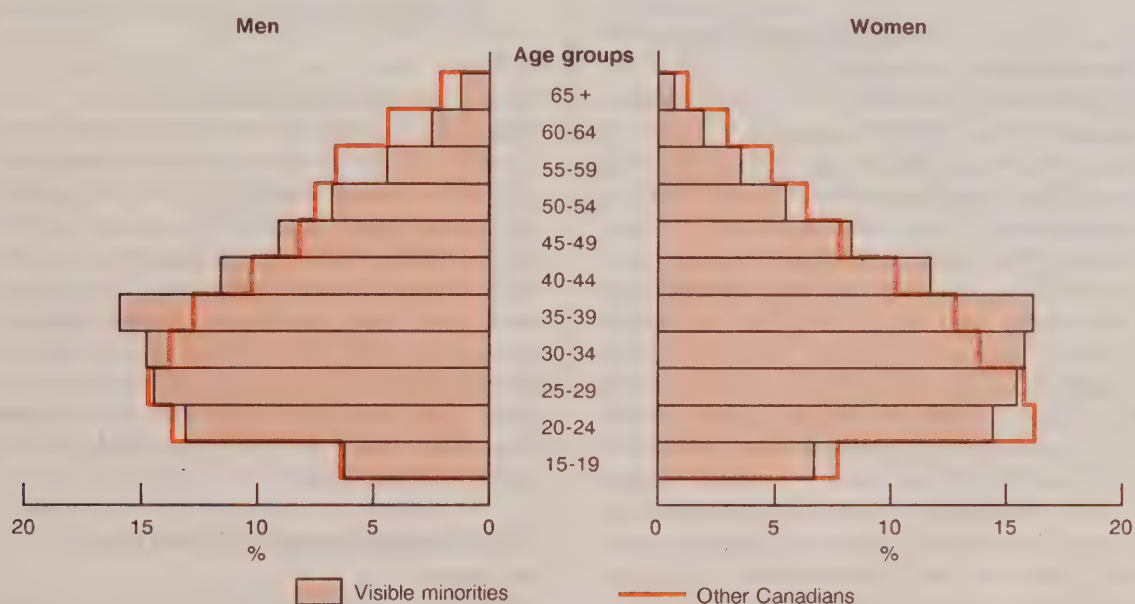
* Includes all the self-employed, whether in incorporated or unincorporated businesses.

** Labour force participants who were either members of an economic family or unattached individuals whose total income in 1985 was below Statistics Canada's low income cut-offs.

† Includes persons who reported belonging to more than one visible minority group.

Age structure of the labour force, 1986

Almost three-quarters of visible minorities in the labour force are from 25 to 54 years of age. For other Canadians, the proportion is only two-thirds.



Source: 1986 Census of Canada

three-quarters were employed; their unemployment rate was only 7%, well below the average for all visible minorities. Contrast this with the situation of South East Asian and Latin American Canadians: about two-thirds were in the labour force, less than 60% were employed, and their unemployment rate was more than double that of Filipino Canadians.

Most visible minorities are recent immigrants

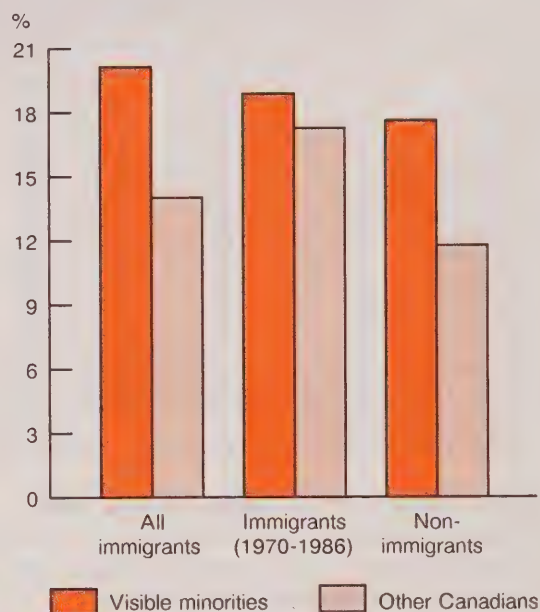
The overwhelming majority of visible minorities were recent immigrants. More than four-fifths of the Black and Chinese groups were born outside Canada and, as of 1986, had been in the country for an average of about 12 years. This compared with an average of almost 24 years in Canada for immigrants other than visible minorities. South East Asians were the most recent arrivals: they had been in Canada an average of less than 7 years. Japanese Canadians were the exception – only a quarter were immigrants and they had been here the longest, almost 16 years on average.

Their level of schooling is higher than that of other Canadians

Visible minorities were, on the whole, better educated than other Canadians, a result in part of the immigration policy that has, over time, given preference to skilled workers, professionals and entrepreneurs.² Sixty percent had some education beyond high school compared with just over 50% of other Canadians. And about 20% had university degrees compared with 12% of other members of the labour force. Filipinos had the highest levels of schooling, with three-quarters reporting postsecondary education and one-third university degrees. Other Pacific Islanders, by far the smallest group, reported the lowest educational attainments; only 40% had any postsecondary schooling and merely 4% had university degrees.

Labour force participants with university degrees, 1986

Compared with other Canadians, a larger proportion of visible minorities have university degrees.



Source: 1986 Census of Canada

Many run their own businesses

About 92% of visible minorities were paid workers (that is, they worked for someone else for wages or salaries), a slightly greater proportion than for other Canadians. But the self-employed³ formed a substantial proportion of the Chinese, Japanese, West Asian and Arab and, especially, Korean groups. Almost a third of Koreans ran their own businesses, and a majority of them had paid help. In contrast, only 2% of Filipino Canadians were self-employed and just 1% employed paid help.

Employment income is lower than average...

In 1985, the average employment income of full-time, full-year workers was \$26,800. But

visible minorities working full time, full year earned just \$24,200, or 10% less. South East Asians received the lowest compensation, more than 25% less than the overall average. Japanese and West Asians and Arab Canadians were the only groups with above average earnings. The employment income of visible minorities born in Canada was 10% higher than for immigrants. This was the reverse of the situation for other Canadians, among whom immigrants earned 8% more than non-immigrants. Differences in the age structure, education and work experience of various groups of immigrants and non-immigrants contribute significantly to these earnings differentials.

The full-time, full-year earnings of visible minority women were 6% below that of other Canadian women, while the earnings of men were 9% below that of other Canadian men. But, in both groups, women received only two-thirds the earnings of men. The notable exception was Filipino women whose earnings were over three-quarters those of Filipino men.

... and the incidence of low income is greater

One consequence of these lower earnings was the higher incidence among visible minorities of persons living below Statistics Canada's low income cut-off levels. About a fifth of visible minorities in the labour force were either members of an economic family or unattached individuals whose total income fell below the cut-off levels. One-ninth of other Canadians found themselves in the same situation. Nine of the ten groups were worse off than other Canadians, the exception being Japanese Canadians. South East Asians and Latin Americans, who tended to be the most recent immigrants to Canada, were the worst off; about a third of both groups were in low-income situations.

Nearly a quarter found work in manufacturing

The proportions of visible minorities working in the goods and service sectors of the economy were similar to that of other Canadians: three out of ten worked in the goods sector. But the distribution of visible minorities by industry division was quite different from that of other Canadians. Nearly 24% were employed in manufacturing, while less than 5% worked in construction or the primary industries. The comparable figures for other Canadians were 17% in manufacturing and more than 13% in construction and the primary industries.

Over 70% of visible minorities worked in the service sector. For all Canadians, retail trade and health and social services employed large numbers. But the proportion of visible minorities in accommodation, food and beverage services was nearly double that for other Canadians. In contrast, visible minorities were underrepresented in a number of service sector industries, notably in government services.

There are more "white collar" jobs among visible minorities

Only 30% of the visible minority labour force worked at "blue collar"⁴ occupations, 3 percentage points less than for the rest of the Canadian work force. But, because of the importance of manufacturing as a source of employment for visible minorities, more than 12% worked in product fabricating, assembling and repairing occupations compared with only 7% of other Canadians. In contrast, the "white collar" visible minorities work force was concentrated in the same four occupation groups as was the rest of the labour force: clerical, sales, managerial and administrative, and services.

Table 4
Visible minorities by major occupation group, 1986

	Experienced labour force*			Employment income of visible minorities who worked full time, full year in 1985	
	Percentage distribution		Proportion of visible minorities	Average	Ratio to other Canadians**
	Visible minorities	Other Canadians			
	%			\$	
Persons 15 years and over	100.0	100.0	6.3	24,200	0.90
White-collar occupations	70.0	66.8	6.6	25,500	0.91
Managerial and administrative	8.8	10.6	5.3	31,800	0.86
Natural sciences, engineering and mathematics	5.6	3.4	10.1	35,500	1.00
Social sciences	1.4	2.0	4.7	31,300	0.86
Religion	0.2	0.3	3.8	18,300	0.98
Teaching	3.0	4.4	4.4	35,000	1.03
Medicine and health	6.9	4.7	9.1	35,000	1.10
Artistic, literary and recreational	1.2	1.7	4.8	24,300	0.94
Clerical	18.5	18.2	6.4	19,600	0.99
Sales	7.6	9.1	5.3	22,200	0.87
Service	16.7	12.4	8.3	15,200	0.75
Blue-collar occupations	30.0	33.2	5.7	21,100	0.85
Farming, horticultural and animal husbandry	1.5	4.2	2.4	15,900	1.06
Fishing and trapping	0.1	0.4	1.2	--	--
Forestry and logging	0.1	0.7	1.2	28,800	1.03
Mining and quarrying	0.1	0.6	1.1	34,200	0.97
Processing	3.9	3.5	7.0	21,800	0.84
Machining	3.0	2.1	8.7	23,400	0.88
Product fabricating, assembling and repairing	12.1	7.2	10.2	19,500	0.80
Construction trades	2.2	6.2	2.3	25,200	0.90
Transport equipment operating	2.0	3.8	3.5	22,500	0.82
Material handling	2.1	1.8	7.2	19,100	0.79
Other crafts and equipment operating	1.1	1.2	6.0	24,600	0.86
Occupations not elsewhere classified	1.7	1.7	6.5	20,600	0.90

Source: 1986 Census of Canada

* The experienced labour force excludes the unemployed who had never worked or who had last worked prior to 1985.

** Ratio to the average employment income of other Canadians who worked full time, full year in 1985.

More than one in five nuclear engineers are members of a visible minority

Visible minorities were comparatively overrepresented in several major occupation groups: product fabricating; machining; natural sciences, engineering and mathematics; and medicine and health. In contrast, their presence was marginal in primary occupations such as mining, forestry and fishing. At a more detailed classification level, they accounted for 30% of jewellers and silversmiths and 29% of sewing-machine operators and knitting occupations. They were also important in a number of professional occupations. For example, 23% of Canada's nuclear engineers were members of a visible minority, as were 15% of physicians and surgeons, 12% of physicists and 11% of dentists.

In medicine and health occupations, they earned more than other Canadians

Among visible minorities who worked full time, full year in 1985, the highest incomes were earned by those in natural science, engineering and mathematics occupations (\$35,500) and the lowest by those in service occupations (\$15,200). Visible minorities in service occupations earned 25% less than other Canadians in the same occupations, while those in medicine and health occupa-

tions earned 10% more, the highest ratio among the 22 major occupation groups.

Conclusion

Viewed at mid-decade, visible minorities formed 6% of the Canadian labour force. Since then, visible minorities have accounted for an increasing share of total immigration. As a result, the following questions are likely to be of considerable interest in the years ahead: How are these new immigrants integrating into the labour force? How does their experience compare with that of previous immigrants from the same areas, as well as with that of visible minorities born in Canada? And, how have visible minorities progressed relative to other Canadians?

The 1991 Census of Canada will provide the information to answer some of these questions. The census is the only national survey that permits a comparative analysis of minority groups active in the Canadian labour market. And, because information on the social, educational and economic characteristics of the Canadian population is collected from one-fifth of all households, profiles of visible minorities can be prepared for small sub-provincial areas; for example, for many of Canada's smaller municipalities and for census tracts within the country's larger urban centres. □

Notes

¹ Refers to all disabled persons aged 15 to 64 in the labour force. Source: Statistics Canada, Health and Activity Limitation Survey, 1986.

² Note that educational attainment is only one of many (and therefore not necessarily the main) criteria used to admit immigrants to Canada. In addition, some immigrants obtained their postsecondary schooling after immigrating to Canada. This is the case especially for persons who came to Canada as children. Still others applied for and were granted landed immigrant status after studying in Canada as foreign students.

³ Includes all persons who reported being self-employed, whether in an incorporated or unincorporated business.

⁴ For the purpose of this study, "white collar" occupations include the following major groups: managerial and administrative; natural science, engineering and mathematics; social sciences; religion; teaching; medicine and health; artistic, literary and recreational; clerical; sales; and service. "Blue collar" occupations include: farming, horticultural and animal husbandry; fishing and trapping; forestry and logging; mining and quarrying; processing; machining; product fabricating, assembling and repairing; construction trades; transport equipment operating; material handling; other crafts and equipment operating; and occupations not elsewhere classified.

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Perspectives on Labour and Income

The quarterly for labour market information

Women's earnings and family incomes

Abdul Rashid

The 1970s saw major changes in the sex composition of Canada's work force – changes which continued into the 1980s. The socio-economic impact of these changes has been extensive. Increasing participation of wives in the labour force augmented family incomes and enhanced the overall well-being of Canadians.¹

In 1970, about 15% of the total income of all families with husbands under 65 years was contributed by wives. This contribution increased to 25% in 1985.² Dual-earner families accounted for nearly two-thirds of all families in 1985 compared with less than one-half of all families in 1970.

Using data from the 1971, 1981 and 1986 Censuses,³ this article reviews changes in the incidence of employment income among men and women, their average earnings and the overall female-to-male earnings ratios between 1970 and 1985. The impact of these changes on family work patterns and family incomes is then examined.

Female earners increase faster than the female population

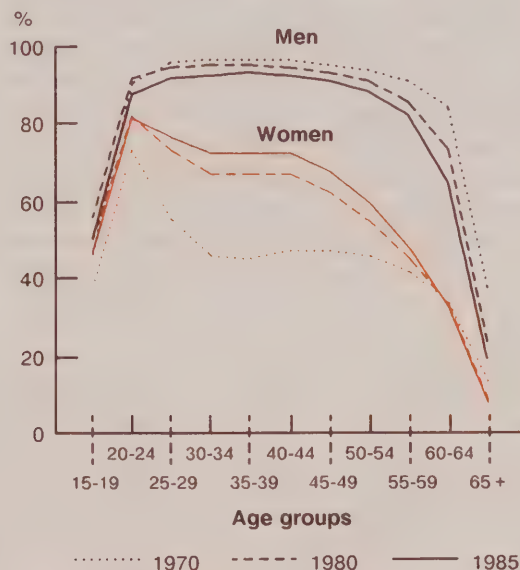
The incidence of employment income among men 15 years and over dropped from 81.2% in 1970 to 79.9% in 1980. By 1985, it had decreased even further, to 76.9%.

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Except for the youngest age group (15 to 19 years), the incidence of employment income among men dropped in all age groups between 1970 and 1985 – by more than 17 points for men 55 years and over.

Incidence of employment income

The proportion of women with employment income has increased dramatically – from 44% in 1970 to 57% in 1985.



Sources: 1971, 1981 and 1986 Censuses of Canada

The trend for women was the opposite. The incidence of employment income increased from 43.8% in 1970 to 54.8% in 1980 and to 56.7% in 1985. This increase, shared by almost all working-age groups, was especially pronounced in the middle age groups. Compared with the 1970s, the change between 1980 and 1985 was less sharp. On an annual basis, the increase in the number of female earners was 4.6% between 1970 and 1980, and 1.9% between 1980 and 1985.⁴

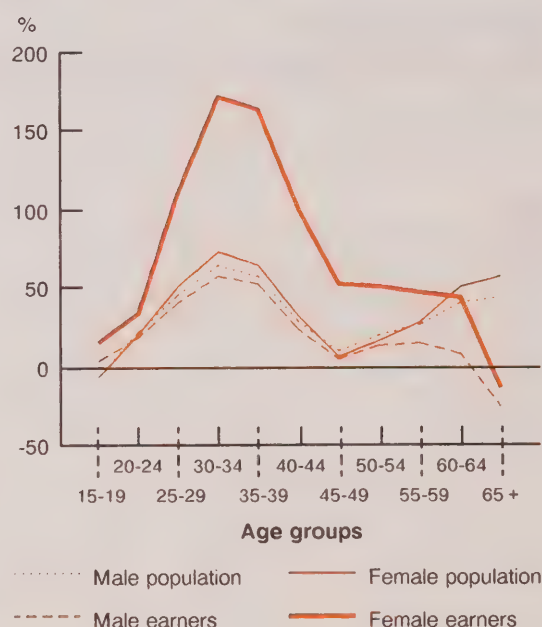
Over the 15-year period, the incidence of employment income declined for men aged 20 and over but increased for women between 15 and 60.

On the whole, between 1970 and 1985, the male population increased by 28.5% and the female population by 32.3%. But, as a result of the much more rapid growth in female employment, the changes in the number of male and female earners differed substantially. Overall, the number of male earners increased by 21.7%, whereas that of female earners increased by 71.3%.⁵

The changes in the male and female populations in various age groups were of about the same magnitude, but major differences existed between the changes in the number of earners. Between the ages of 20 and 59, the changes in the number of male earners were consistent with their population growth.⁶ Beginning with age 60, the changes in the number of male earners

Changes in population and earners

Growth in the number of female earners surpassed the increase in their population between 1970 to 1985.



Sources: 1971 and 1986 Censuses of Canada

were significantly below their population changes.

In contrast, the percentage increases in the number of female earners in various age groups exceeded – quite substantially in some cases – their population increases over

Table 1
Male and female population and earners, aged 15 and over, 1970, 1980 and 1985

Year	Population		Earners		Average earnings	
	Male	Female	Male	Female	Male	Female
	'000				(1985 dollars)	
1970	7,474	7,579	6,071	3,321	20,275	9,808
1980	9,152	9,458	7,309	5,186	24,123	12,528
1985	9,606	10,028	7,387	5,688	23,231	12,891

Sources: 1971, 1981 and 1986 Censuses of Canada

Definitions

Employment income and earnings are used as synonyms in this study and consist of wages and salaries, net income from self-employment in a non-farm unincorporated business or professional practice, and net income from the operation of a farm in the calendar year preceding the census.

The **incidence of employment income** is the percentage of individuals 15 years and over who reported employment income.

Average earnings are calculated by dividing the total earnings of a group by the number of earners in the group.

To allow comparisons in real terms, the income data for 1970 and 1980 were adjusted to reflect the purchasing power of the dollar in 1985. Thus, all income figures in this article are stated in **constant (1985) dollars**.

A **census family** consists of a couple with or without any never-married children, or a lone-parent with one or more never-married children. The analysis is restricted to husband-wife families with husbands under 65 years of age, since both spouses in these families are potential labour force participants. Excluded are elderly families and lone-parent families headed by single (mostly female) parents with young children, since their work patterns are unique.

Actual weeks during which the spouses worked in the year preceding the census were used to analyze **work patterns**. Those who worked 49 to 52 weeks, mostly full time, were classified as full-year, full-time (FYFT) workers. Those who worked part time or worked 1 to 48 weeks were classified as part-year/part-time (PY/PT) workers.

the 1970s. The number of female employment income recipients in the middle age groups more than doubled, from less than 1 million in 1970 to over 2 million in 1985. The increases in the 30 to 34 and the 35 to 39 age groups were 171.0% and 161.6% respectively.

Thus, while the proportion of women in the population 15 years and over changed from 50.3% in 1970 to 51.0% in 1985, their proportion among all earners increased substantially, from 35.4% in 1970 to 43.5% in 1985.

Age-earnings profile of women begins to change

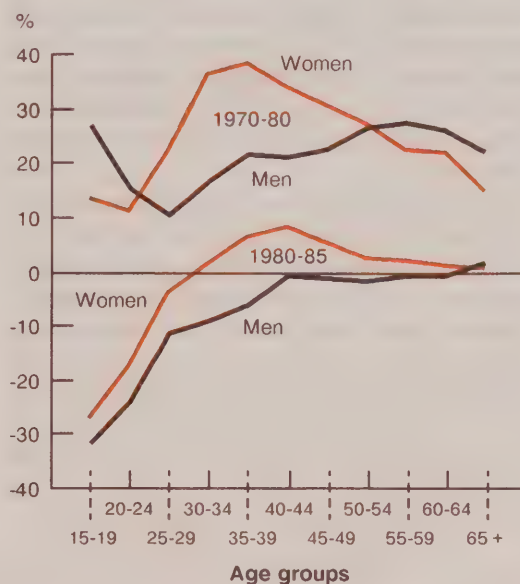
The average employment income of men increased by 19.0% between 1970 and 1980, but dropped by 3.7% between 1980 and 1985.

Women experienced significantly higher increases in both periods: 27.7% between 1970 and 1980, and another 2.9% between 1980 and 1985.

Women gained significantly more in almost all age groups in each of the two periods. In the four five-year age groups, beginning with age 25, the rates of growth between 1970 and 1980 in the average earnings of women were substantially higher than those for men. The recession of the early 1980s had an impact on both sexes but, on the whole, women fared much better than men. Average male earnings in 1985 were lower than in 1980 for every working-age group. In contrast, only women under age 30 had lower average earnings in 1985 than in 1980, but their loss was smaller than that for men. In all other age groups, women experienced gains.

Change in average earnings

Average earnings of women increased at twice the rate for men.



Sources: 1971 and 1986 Censuses of Canada

The earnings profile of a population group reflects the intensity of work, education, training and work experience of its members.

In the absence of information on work experience, age is often used as a proxy in the expectation that the accumulation of work experience will continue over the working life if the attachment to the labour force is stable. Census data reveal that the intensity of work measured in terms of weeks and hours worked is lower for the population at the two ends of the age distribution. Beginning at a low level, it increases with age to a maximum between 35 to 44 years and then declines steadily.

Moreover, as may be expected from rising levels of education over time, the data also show that the proportion of university graduates was higher among these individuals than the older, more experienced individuals.

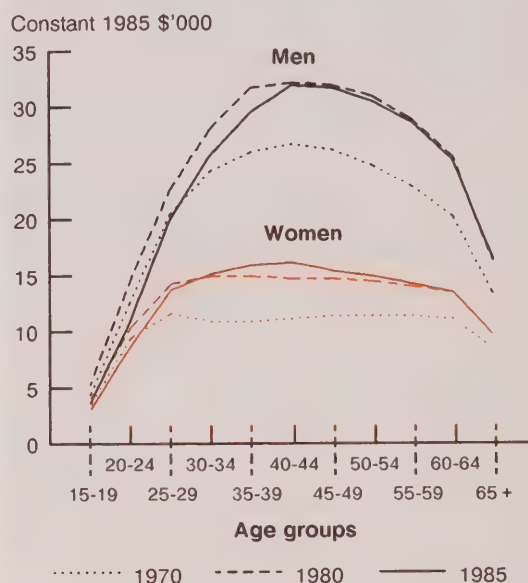
As a consequence of these phenomena, overall average earnings tend to rise with age, reach a peak and then decline. This relationship is clearly demonstrated by the age-earnings profile of men. In contrast, the average employment income of women in 1970 reached a level slightly higher than their overall average between ages 25 and 29 years, and then stayed at a relatively even plateau.

One of the factors contributing to this difference is women's historical lack of permanent attachment to the labour force and, thus, the absence of a relationship between their age and work experience. Between 1970 and 1985, the number of female earners increased by about 2.37 million. About one-half of this can be ascribed to population increases and the remaining half to the increase in the incidence of employment among women.⁷

This increase in the number of female earners was spread across all working-age groups.⁸ But, in the upper age groups, female entrants generally did not bring the same

Average earnings

Women's earnings have begun to show a closer relationship to their age, more like the age-earnings profile of men.



Sources: 1971, 1981 and 1986 Censuses of Canada

length of work experience as their male counterparts. Thus, each successive age group of female earners is a mixture of experienced workers and fresh entrants to the work force. Since these new entrants in the upper age groups are likely to receive less than the normal wage of their age group, they tend to depress the overall average earnings of the group. This is one reason for lack of variation in the average earnings of women by age.

As a consequence of the increasing numbers of women with long-term labour force attachment, the age-earnings profile of women has started to lose its traditional flat shape. Compared with 1970, female average earnings by age varied more in 1980 and 1985.⁹ This variation is likely to increase further as the overall earnings of women grow with their age and work experience.

Ratio of female-to-male earnings increasing steadily

The overall average earnings of women are often discussed in terms of their ratio to the average earnings of men. This ratio increased from 48.4% in 1970 to 51.9% in 1980 and to 55.5% in 1985. Thus, the ratio increased by an average of half a percentage point annually between 1970 and 1985. Although the overall ratio of female-to-male earnings is a convenient summary measure, it is important to note two points.

First, it is unrealistic to expect large changes in the ratio between two averages over a short time, especially when both averages are changing in the same direction.¹⁰ The ratio of female-to-male earnings increased by 7 percentage points from 1970 to 1985, although the annual rate of increase in the earnings of women (1.84%) was twice the rate for men (0.91%)¹¹ during this period. If these average rates continued for the next 15 years, the overall ratio of female-to-male earnings would rise to 63.7% in the year 2000, and that of full-year, full-time working women would increase to 71.7%.

Second, as mentioned earlier, earnings of both men and women reflect the impact of many factors, such as the intensity of work, education, training and occupation. Since male and female earners differ significantly in terms of these factors, a comparison of changes in the overall average earnings will hide the impact of these differences. It is therefore more revealing to examine the changes in the earning ratios between relatively homogeneous groups of men and women.

As a consequence of changes in the earnings of various age groups, the ratio of

female-to-male earnings increased in all age groups. In the 30 to 34 group, it improved by 14 percentage points between 1970 and 1985, while the increases in each of the two surrounding groups (25 to 29 years and 35 to 39 years) were close to 12 points.

Work experience itself may consist of full-time or part-time work. The female-to-male earning ratios for full-year, full-time workers increased from 59.9% in 1970 to 63.8% in 1980, and to 65.5% in 1985. In 1970, the ratio between the earnings of full-year, full-time working married women and men was 52.8%. It increased by 9 percentage points, to 62% in 1985. Within this group, the ratio for married women 35 to 44 years increased by 14 points, from 47.3% in 1970 to 61.7% in 1985.

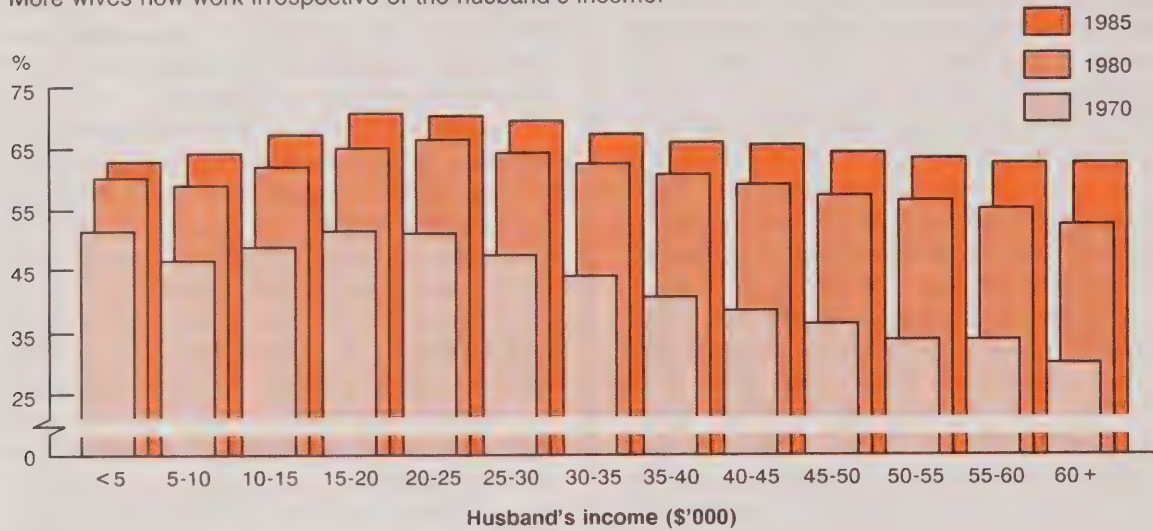
Thus, compared with the overall changes, improvements in both averages and ratios for female earnings are more noteworthy in the middle and lower age groups.¹²

Family work patterns continuously changing

The most important factor leading to the spectacular increase in the number of working women is the entry of wives into the labour market. Not long ago, the roles of spouses were defined as breadwinner for the husband and homemaker for the wife. Generally, wives entered the labour market to supplement the husband's income. Thus, the lower the husband's income, the more likely the wife was to enter the labour market. This traditional relationship between a husband's income and a wife's work status has lost much of its strength and the dual-earner family has already become the norm rather than the exception.

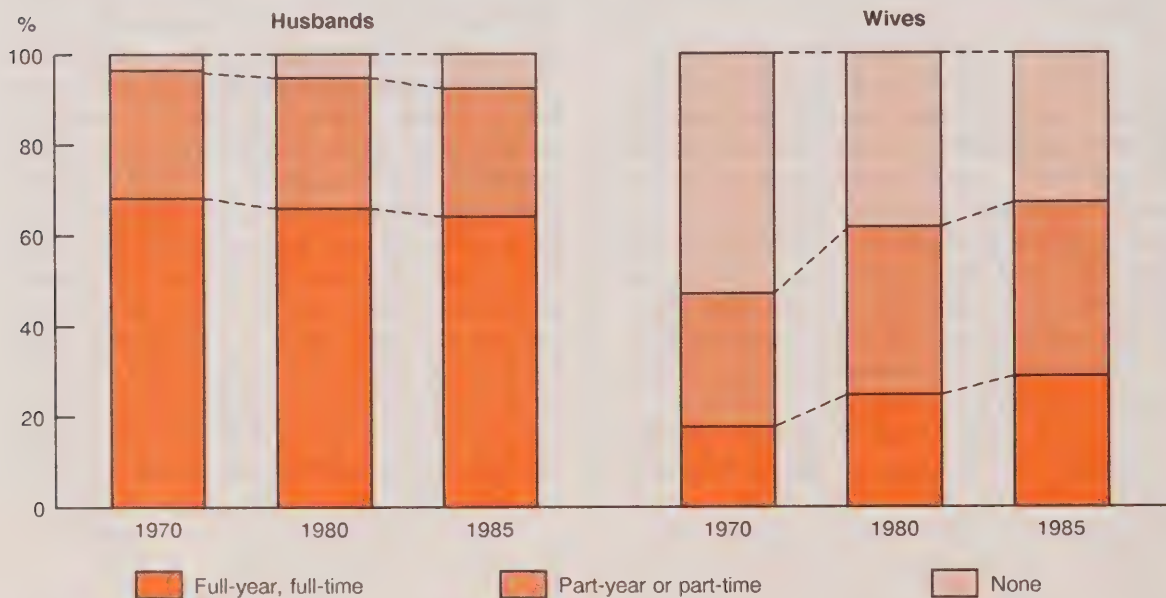
Percentage of wives working, by husband's income in 1985 constant dollars

More wives now work irrespective of the husband's income.



Work patterns of spouses

Work activity showed a slight decline among husbands. But two-thirds of wives worked in 1985 compared with less than half in 1970.



Sources: 1971, 1981 and 1986 Censuses of Canada

In 1970, while the overall proportion of working wives was 46.9%, it ranged from 29.7% when the husband's income was \$60,000 or more, to 51.5% when his income was \$20,000 to \$24,999 a spread of 22 percentage points. In 1980, the proportions ranged between 52.2% and 66.1% – a spread of 14 points. By 1985, the range had declined to less than 9 points, with the highest proportion (70.6%) of wives working in families with husbands whose incomes were in the \$15,000 to \$19,999 range, and the lowest (62.3%) among women whose husbands were in the highest income group (\$60,000 or more).

This increased activity of wives in the labour market has affected family work patterns and, in turn, family incomes. In 1970, less than one-half (46.9%) of all wives worked. This increased to 61.6% in 1980 and to 66.9% in 1985.

Changes, though less significant, also took place in the work patterns of husbands. According to the 1971 Census, 96.4% of all husbands under 65 worked in 1970. During the 1970s, this proportion dropped to 94.8%.¹³ This trend continued in the 1980s with another decrease of 2 percentage points (to 92.5%) in the proportion of working husbands in 1985. Thus, 7.5% of husbands under the age of 65 did not work in 1985 compared with only 3.6% in 1970.¹⁴

Between 1970 and 1985, the total number of families increased by 24.6% (20.5% during the 1970s and 3.5% during the first half of the 1980s), but the number of working husbands increased by only 19.6%. In contrast, the number of working wives increased by 77.9%. Thus, the increases in the number of working husbands did not keep pace with the overall increase in the number of families either during 1970 to 1980 or during 1980 to 1985. However, the increases in the number of working wives, (whether full year, full time, or part year or part time), were several times the overall growth in the number of families.¹⁵

Families were divided into nine categories by combining the work patterns of husbands and wives (Table 2). Compared with the overall increase of 24.6% in the number of all families, the changes in the various husband-wife work combinations ranged from -32.6% to 255.7%.

The three categories in which the husbands did not work show large increases in percentage terms, but their overall impact is small since these categories account for a very small proportion of all families. Of the remaining six categories, the two that have shrunk over the 15 years consist of families in which the husbands worked but the wives did not. The proportion of these families dropped from 50.5% in 1970 to 34.9% in 1980 and to 28.4% in 1985. Thus, dual-earner families increased from less than one-half of all families in 1970 to almost two-thirds in 1985.

Changing work patterns affect family incomes

The simplest way to see the impact of these work-pattern changes on family incomes is to compare average family incomes with and without the incomes contributed by wives. Total average family income increased by 31.0% between 1970 and 1980. Family incomes declined during the recession of the early 1980s, so that average family income in 1985 was still 0.4% lower than in 1980. When the incomes of wives are excluded, the 1970 to 1980 increase is reduced to 20.4%, while the 1980 to 1985 decrease plunges to 4.7%.

The contribution of wives towards family income has been increasing over the years, from 14% in 1970 to 22% in 1980 and to 25% in 1985. In the case of the steadily increasing number of wives working full year, full time, their average contribution increased from 37% in 1970 to 40% in 1985. The contribution of wives working part year or part time increased from about 20% in 1970 to 25% in 1985.

Table 2
Husband-wife families by work patterns of spouses, 1970, 1980 and 1985 (husbands under age 65)

Work patterns of husbands	Work patterns of wives			Total
	Full-year, full-time*	Part-year or part-time**	Did not work	
Number of families				
1970				
Full-year, full-time	550,765	778,115	1,439,615	2,768,495
Part-year or part-time	162,345	377,580	617,165	1,157,090
Did not work	17,445	24,170	105,705	147,320
Total	730,555	1,179,865	2,162,485	4,072,900
1980				
Full-year, full-time	929,720	1,130,555	1,162,775	3,223,050
Part-year or part-time	258,820	619,670	550,875	1,429,365
Did not work	35,095	48,520	171,435	255,050
Total	1,223,635	1,798,745	1,885,085	4,907,460
1985				
Full-year, full-time	1,084,305	1,206,900	970,055	3,261,260
Part-year or part-time	311,650	653,460	470,555	1,435,665
Did not work	62,060	79,215	238,570	379,845
Total	1,458,015	1,939,575	1,679,180	5,076,770
Average family income				
	Constant (1985) dollars			
1970				
Full-year, full-time	40,612	35,397	33,547	35,472
Part-year or part-time	32,834	27,869	24,448	26,741
Did not work	21,586	14,873	12,432	13,916
Total	38,429	32,567	29,918	32,212
1980				
Full-year, full-time	53,899	46,469	41,136	46,688
Part-year or part-time	42,525	37,111	31,215	35,819
Did not work	30,889	23,590	18,380	21,092
Total	50,833	42,628	36,167	42,192
1985				
Full-year, full-time	54,671	46,829	41,119	47,738
Part-year or part-time	41,226	35,127	28,912	34,414
Did not work	32,506	23,634	18,023	21,559
Total	50,854	41,939	34,417	42,011
Wife's average income				
1970				
Full-year, full-time	14,123	6,447	429	4,845
Part-year or part-time	13,978	7,011	443	4,485
Did not work	15,180	7,299	1,313	3,937
Total	14,116	6,645	476	4,710
1980				
Full-year, full-time	20,135	9,739	1,072	9,611
Part-year or part-time	19,308	10,222	1,157	8,374
Did not work	20,775	10,405	2,472	6,500
Total	19,978	9,923	1,224	9,089
1985				
Full-year, full-time	20,828	10,412	1,368	11,185
Part-year or part-time	19,752	10,456	1,544	9,553
Did not work	21,253	10,518	3,053	7,583
Total	20,616	10,431	1,657	10,454

Sources: 1971, 1981 and 1986 Censuses of Canada

* Worked 49-52 weeks, mostly full time.

** Worked less than 49 weeks or mostly part time.

It is possible to estimate family incomes in 1980 and 1985 based on the family work patterns in 1970.¹⁶ Actual average family incomes in 1970, 1980 and 1985 were, respectively, \$32,212, \$42,192 and \$42,011. Had the work patterns of husbands not changed over the period under review, average family income would have been \$42,675 in 1980 and \$43,006 in 1985. Changing work patterns of husbands resulted, on average, in a reduction of \$483 between 1970 and 1980, and a drop of another \$512 during the first half of the 1980s. This is not surprising given the declining proportions of working husbands under age 65 during this period.

In contrast, without the change in the work patterns of wives, family income would have been lower, on average, by \$1,522 in 1980 and by another \$945 in 1985. Again, this result is not surprising, given the increasing proportions of working wives. Average family income increased by 30.4% between 1970 and 1985. Without the higher participation of wives in the labour market, the increase would have amounted to only 22.8%.

When the joint impact of changes in the work patterns of husbands and wives is taken into account, the overall change has been for the better. The negative impact of the decline in the proportion of working husbands has been more than offset by the positive impact of the increase in working wives.

Conclusion

During the 1970s and early 1980s, the increases in the number of female earners surpassed their population growth. Although the proportion of women among all earners increased from 35% in 1970 to 44% in 1985, there is still potential for further growth in the number of female earners, albeit at a slower pace.

Actual and standardized family incomes

Year	Family income	
	Constant (1985) dollars	
1970		
Actual		32,212
1980		
Actual		42,192
Standardized* by 1970 work patterns of:		
Husband:	$(P_i)(Y_i,80)$	42,675
Wife:	$(P_j)(Y_j,80)$	40,670
Both spouses:	$(P_{ij})(Y_{ij},80)$	41,321
1985		
Actual		42,011
Standardized by 1970 work patterns of:		
Husband:	$(P_i)(Y_i,85)$	43,006
Wife:	$(P_j)(Y_j,85)$	39,544
Both spouses:	$(P_{ij})(Y_{ij},85)$	40,901

* P_i = proportion of husbands in each of the three work categories (FYFT, PY/PT, None) in 1970.

P_j = proportion of wives in each of the three work categories (FYFT, PY/PT, None) in 1970.

P_{ij} = proportion of families in each of the nine husband-wife work combinations in 1970.

Y_i = average family income in each of the three work categories of husbands in 1980 and 1985.

Y_j = average family income in each of the three work categories of wives in 1980 and 1985.

Y_{ij} = average family income in each of the nine husband-wife work combinations in 1980 and 1985.

Although average earnings for men in various age groups reflect the impact of their work experience, women's earnings do not show the same degree of increments by age. However, compared with 1970, the female age-earnings profile in 1985 had assumed a greater similarity to the male profile. The more stable attachment of women to the labour force has started to give women greater work experience with concomitant monetary dividends.

The average annual rate of growth in female earnings was twice the rate of increase in men's earnings between 1970 and 1985. The overall ratio of female-to-male earnings increased by 7 percentage points. Increased work experience, accompanied by appropriate changes in educational and occupational profiles would likely narrow the gap further.

The most important factor in the growth of the female labour force has been the entry of wives into the labour market. Between 1970 and 1985, the proportion of working wives increased from 47% to 67%.

The overall contribution of wives to family income increased from 15% in 1970 to 25% in 1985. In the case of working-wife families, their contribution amounted to nearly one-third of family income. This contribution is likely to increase as female earnings improve due to a more stable labour force attachment and greater work experience, as well as other factors such as employment equity and pay equity legislation, higher levels of education and occupational diversification.

Furthermore, since most working wives (57% in 1985) still work only part year or part time, there is significant potential for a change towards full-year, full-time work,

and the consequent increase in family income.

Finally, the pool of non-working wives (33% in 1985) is likely to shrink further, leading to an increase in the number of working wives and, consequently, to an increase in their contribution towards family income.

In spite of the slight decline in the proportion of working husbands between 1970 and 1985, the fast rise in the proportion of working wives has led to a significant increase in the number of dual-earner families. On the one hand, during times of rising incomes and prosperity (as in the 1970s), working wives augmented family incomes and raised standards of living. On the other hand, during recessionary periods (the early 1980s), the contribution of working wives absorbed some of the effects of the recession and helped maintain family living standards.

The 1991 Census will extend the detailed and consistent data on the characteristics of individuals and families and their incomes to two decades. These data will not only confirm (or negate) the conclusions drawn in this study, but will also provide a valuable source to undertake further research on individual and family incomes. □

Notes

¹ In 1931, 19.6% of all women 15 years and over, and only 3.5% of all married women, participated in the labour force. The demands of World War II brought about an irreversible change. By 1986, these proportions had grown to 59.4% and 57.4%, respectively. Minor differences of concept and coverage often underlie historical statistics on the labour force but these differences do not reduce the importance or magnitude of change in the sex composition of Canada's work force. For some of the relevant statistics, see F.T. Denton and S. Ostry, *Historical estimates of the Canadian labour force* (1967); Statistics Canada, *Historical, labour force, for Canada and provinces, 1911-1971* (1974); Statistics Canada, *Labour force activity* (1989); and B.G. Spencer and D.C. Featherstone, *Married female labour force participation: a micro study* (1970).

² The analysis of family income in this study is restricted to families with husbands under 65 years (see *Definitions*). For the elderly families, the contribution of wives towards family income amounted to 21.5% in 1970 and 29.3% in 1985. Thus, the average contribution of wives in all husband-wife families increased from 15.1% in 1970 to 25.3% in 1985.

³ The 1976 Census did not collect information on income.

⁴ However, the economy had not yet fully recovered from the recession of the early 1980s. The overall income levels in 1985 were still below the peak reached in 1980.

Notes – Concluded

⁵ If there had been no changes in the overall population between 1970 and 1985, the number of male earners would have actually dropped by 6%, but the number of female earners would still have increased by 29%.

⁶ The large increase in the very young (15 to 19 years) male (and female) earners is consistent with the information on weeks worked and the annual labour force participation rates in 1970 and 1980. This increase could be due to the greater availability of employment for summer students in 1980 compared with 1970 and 1985.

⁷ The impact of changes in population and incidence of employment income between 1970 and 1985 can be estimated as follows:

$$\Sigma(\Delta P_i)(I_i 70) + \Sigma(\Delta I_i)(P_i 70) + \Sigma(\Delta P_i)(\Delta I_i),$$

where ΔP_i = change in female population 15 years and over and ΔI_i = change in the incidence of employment income in each of $i = 11$ age groups.

⁸ During the period, there was a drop in the incidence of employment among women 60 years and over.

⁹ A measure of variation around the average is provided by the coefficient of variation calculated as follows:

$$CV = \frac{\sqrt{\Sigma P_i (X_i - \bar{X})^2}}{\bar{X}} * 100,$$

where P_i is the proportion of female earners in each age group, X_i is the average earning in each age group, and \bar{X} is the overall average earning of women.

The CV for female average earnings by age increased from 25% in 1970 to nearly 30% in 1985.

¹⁰ Two variables, F and M, with unequal values at time T and subject to unequal (but constant) annual rates of change, ΔF and ΔM , will equal each other in N years provided the rate of change is higher for the variable with lower value. That is:

$$(F)(1 + \Delta F)^N = (M)(1 + \Delta M)^N$$

$$\text{or } N = \frac{\log(M/N)}{\log(1 + \Delta F)/(1 + \Delta M)}$$

¹¹ These annual increases are in real terms after adjustment for changes in prices.

¹² The 1991 Census data will provide an opportunity to study changes, spanning two decades, in the earnings of men and women in various age-education-occupation groups.

¹³ The drop was even larger in full-year, full-time work (from 68.0% in 1970 to 65.7% in 1980).

¹⁴ This decline is not entirely unexpected in view of the increasing trend towards early retirement. Between 1970 and 1985, the incidence of employment income dropped by 9 percentage points among men aged 55 to 59 years and by 19 percentage points among men aged 60 to 64.

¹⁵ The significance of these changes becomes apparent when changes in the population are taken into account. Compensating for the increases in the overall number of families, the incidence of work among husbands declined by 4%, while it increased by 42.7% among wives.

¹⁶ The procedure adopted controls for change in a single variable – work patterns. However, family incomes are actually influenced by a host of factors that vary over time.

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Computers in the workplace¹

Graham S. Lowe

Spectacular advances in micro-electronic technologies are transforming the workplace. Over the past decade, the effects of technological change on employment opportunities, job content and work rewards have been widely discussed. Indeed, the debate has polarized around positive and negative perspectives.² The positive image of an emerging post-industrial society emphasizes the personal and social advantages of work in high-technology and information-intensive service industries: jobs will be more challenging and rewarding, offering employees more control over where, when and how they work. Critics, however, raise serious doubts. Will more efficient technologies mean fewer jobs? Will automation de-skill work and reduce the overall quality of working life? And if there are benefits from automation, who will be the winners?

Unfortunately, with the exception of research by the Economic Council of Canada, few national studies have examined the extent and impact of technological changes in the workplace.³ Thus it is difficult to evaluate these competing positions on new technologies. This article injects some new

evidence into the debate using data from the General Social Survey (GSS) of February 1989.

Specifically, the GSS illuminates three issues in workplace automation. First, it documents which employees are most likely to use mainframe computers, personal computers, and word processors. This captures office automation, which accounted for the majority of workplace technological innovations in the last decade.⁴ However, the survey did not examine the use of new industrial technologies such as robots, computer numerically controlled machines, computer-assisted manufacturing, or automated material handling systems. Second, shifting to a broader focus on computers and automated technology, the GSS addresses how their introduction affected the employed labour force during the 1984 to 1989 period. And third, the survey briefly touches upon the issue of job loss resulting from the introduction of new technology, broadly defined.

Computers on the job

Our starting point is the distribution of information-processing technology. Those employed at the time of the survey in February 1989 were asked, "Do you use computers such as mainframes, personal computers or word processors in your job?" One-third, 4.3 million individuals, answered

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yes. On-the-job computer use varied considerably by province. Use was lowest in the Atlantic provinces, Saskatchewan and Quebec and highest in Ontario, Alberta and British Columbia. This trend runs parallel to the patterns of computer skills and home computer ownership.⁵

Computerized work also varied markedly by age (Table 1). Teenagers who had left school and were in the labour force had the lowest level of computer use (13%). In contrast, over 40% of the baby-boom cohort (ages 25 to 44) used computers at work.

As well, women reported a higher level of computer use. Over 37% of women used computers in their work, compared with about 30% of men. (In contrast, in the adult population, slightly more men than women reported knowing how to use a computer.) However, this difference results from women in the labour force being concentrated in office jobs where automation is well under way.

Education is also a factor in determining who does or does not use a computer at work. The higher one's level of

education, the greater the likelihood of working with a computer. About 55% of those with university degrees used computers at work, compared with only 12% of individuals with less than high school (Table 2).

Table 2

Use of mainframes, personal computers, and word processors on the job, by education and sex, 1989

	Proportion of employees		
	Male	Female	Total
	%		
University degree	57.8	49.7	54.5
Postsecondary diploma	38.5	41.2	39.8
High school diploma	29.2	45.2	37.2
Less than high school diploma	10.3	15.8	12.4

Source: General Social Survey

Variations in computer use by occupation

The strong relationship between education and on-the-job computer use largely reflects occupational differences. Two white-collar occupations had extensive computer use (Table 3). Specifically, over three-quarters of individuals in science and engineering and 52% of managers and administrators used computers. Only one other occupation, clerical, had a comparably high use level (55%). Employees least likely to use computers were in service and primary occupations (both around 10%).

In the three most computerized occupations, women were heavier users than men. But this pattern was not consistent across all occupations. In teaching and social sciences, for example, substantially higher proportions of men used computers.

Table 1

Use of mainframes, personal computers, and word processors on the job, by age and sex, 1989

	Proportion of employees		
	Male	Female	Total
	%		
All age groups	30.8	37.6	33.8
15-19	12.3	13.0	12.6
20-24	23.8	35.2	29.4
25-34	35.8	45.8	40.2
35-44	39.2	44.3	41.4
45-54	29.3	33.9	31.3
55-64	21.0	24.9	22.5

Source: General Social Survey

Table 3
Use of mainframes, personal computers, and word processors on the job, by occupation and sex, 1989

	Proportion in occupation		
	Male	Female	Total
	%		
All occupations	30.8	37.6	33.8
Managerial/ administrative	50.3	54.7	51.9
Science/engineering	76.5	81.9	77.6
Social sciences	42.0	33.5	38.0
Teaching	58.6	36.5	45.2
Medicine/health	27.0	20.4	22.0
Artistic/literary	40.7	33.0	36.7
Clerical	35.9	60.5	55.3
Sales	33.6	33.7	33.7
Service	16.6	5.0	9.8
Primary	11.7	—	10.3
Manufacturing/ processing	15.7	—	13.4
Construction/ transportation	10.5	33.6	13.3

Source: General Social Survey

Using a more detailed classification scheme, we find nine occupations in which 60% or more of employees reported using computers (Table 4). This identifies what the Economic Council of Canada refers to as high-tech occupations – jobs requiring either an in-depth knowledge of the principles and applications of technology or having a high technology content.⁶ At this level of detail, over 90% of individuals in two occupations – mathematics, statistics, systems analysis and related fields; and office machine and electronic data processing equipment operators – worked with computers.

These nine high-tech occupations are clearly different, though, in educational requirements, earnings potential, and advancement opportunities. The juxtaposition of high-status (largely male) and low-status (mainly female) occupations is quite apparent. Alongside managers, administrators, engineers, architects and scientists we

find clerical and sales workers. Indeed, computer use is most extensive at both ends of the white-collar occupational hierarchy.

Variations in computer use by industry

The below-average computer use in the primary industries, manufacturing, and construction mirrors the occupational trends noted. Within the goods-producing sector of the economy, computers were most common in manufacturing. It must be kept in mind, however, that the 1989 GSS focused on the information processing technology usually found in offices. As such, the GSS did not tap the full extent of automation in the goods-producing sector of the economy.

Clearly, the service sector led the way in the use of computers on the job. This is not surprising, given findings from the Economic Council of Canada's study⁷ and the wording of the GSS question on technology

Table 4
Occupations with 60% or more employees using mainframes, personal computers, or word processors, by sex, 1989

	Proportion of employees		
	Male	Female	Total
	%		
Mathematics, statistics, systems analysis and related	97.7	93.3	96.2
Office machine and EDP operators	86.4	95.5	93.3
Management, administration and related	79.0	70.0	74.8
Architects/engineers	71.1	69.0	71.0
Stenographers/typists	65.6	70.6	70.6
Sales (services and other non-commodity sales)	56.1	77.5	65.7
Physical and life sciences	64.4	71.3	65.9
Architecture- and engineering-related	64.9	60.0	64.2
Library/filing/correspondence and related clerks	43.1	67.2	60.4

Source: General Social Survey

use, which was slanted towards service sector applications. Three out of four financial industry employees (535,000 individuals) worked with computers. Close to half the employees in business services and public administration also used computers. The relatively high rate of computer use in the transportation and communication industry reflects the reliance of communications firms on sophisticated technologies. Given the huge volumes of information processed by these firms, each one requires large numbers of clerks (about 80% of whom are women), numerically the largest single occupational group of computer users.

1989 General Social Survey (GSS) questions on computers in the workplace

- "Do you use computers such as mainframes, personal computers or word processors in your job?"
- "In the last five years, how much has your work been affected by the introduction of computers or automated technology? Would you say... Greatly? Somewhat? Hardly? Not at all?"
- If respondent answered "Greatly" or "Somewhat":
 - "In the last five years:
 - has the level of skill required to perform your work increased, decreased, or stayed the same...
 - has the job security increased, decreased or stayed the same...
 - has your work become more interesting, less interesting, or stayed the same as a result of the introduction of computers or automated technology?"
- If respondent lost a job between January 1984 and December 1989: "Why did this happen (mark all that apply): An employer going out of business? A plant closing? The introduction of new technology? Reduction of staff? Seasonal job? Shortage of work? Other?"
- "Do you think it is likely you will lose your job or be laid off in the next year?" IF YES: "Do you think this will be because of the introduction of computers or automated technology?"

Employment characteristics, working conditions and computer use

The occupational and industrial distribution of mainframe computers, personal computers, and word processors gives only a broad outline of computer-use patterns. To fill in the details, we must examine the characteristics of jobs associated with computer use.

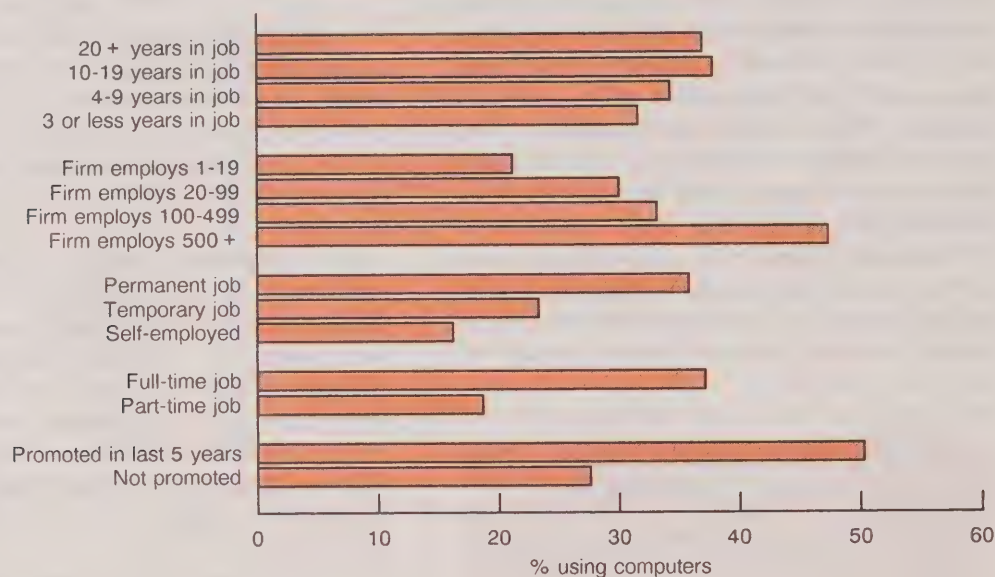
Employee seniority had little bearing on computer use. Employees in permanent jobs were much more likely to use computers than workers in temporary, casual or seasonal work. Relatively few self-employed individuals used computers. Proportionately more full-time employees than part-time employees used computers. Large firms had far more employees using computers than small firms.

As already mentioned, managers and administrators are in the high-tech group of occupations. The 1989 GSS asked two questions to further probe computer use among managers and supervisors. Employed respondents were asked: "Which of the following best describes the work you do? Is it managerial, supervisory or neither?" Respondents who indicated that their work was managerial were then asked: "Would you say that you are in a top-, upper-, middle- or lower-management position?" Managerial and supervisory employees were more likely to use computers than their subordinates. However, within management ranks, individuals at middle or lower levels were bigger users than those further up the hierarchy.

To summarize: secure, full-time jobs; supervisory or lower- and middle-management positions; and jobs in large organizations had significantly higher than average rates of computer use. This amplifies the Economic Council of Canada's recent distinction between "good jobs" and

Selected characteristics of employees using computers* on the job, 1989

Permanent, full-time employees in large firms were most likely to use computers on the job.

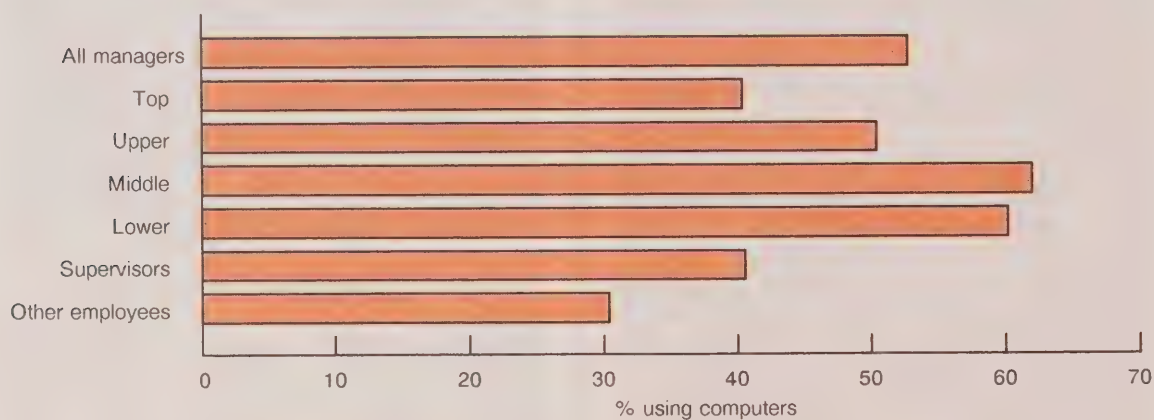


Source: General Social Survey

* Mainframes, personal computers, word processors

Computer* use on the job, 1989

Middle- and lower-level managers had the highest rates of computer usage.



Source: General Social Survey

* Mainframes, personal computers, word processors

"bad jobs" in the service economy showing that good jobs are also more computer based.⁸ As further evidence, individuals making progress in their careers, by virtue of having been promoted in the previous five years, also had well above average rates of computer use.

If satisfying, challenging and rewarding jobs are also more computerized than jobs lacking these characteristics, then automation may be contributing to the polarization of employment rewards, which many analysts attribute to recent economic restructuring.⁹

The 1989 GSS also asked employees to evaluate specific aspects of their jobs. On the whole, these self-reported evaluations suggest that employees using computers do have better jobs. Specifically, greater proportions of computer users agreed strongly or somewhat that their positions required a high level of skill, provided a lot of decision-making freedom, paid well, and offered good promotion or career prospects. Similarly, these same employees were far less likely than non-users to perform repetitive work. The only job characteristic that did not seem to vary by computer use was having pleasant physical surroundings. Differences in job satisfaction between users and non-users, while minor, also followed this same general pattern.

These results, while not overwhelming, suggest that within the labour force as a whole using a mainframe computer, personal computer, or word processor is associated with other job characteristics indicative of somewhat more challenging and rewarding work. However, this generalization should not overshadow the considerable diversity in job rewards within the group of high-tech occupations identified above.

Hours of on-the-job computer use

Computer users spent an average of 16.2 hours weekly on their machines (Table 5). Women spent slightly more hours using computers than men, reflecting their predominance in clerical and other office jobs that are extensively automated. Across occupations, average weekly hours ranged from a low of between 8 and 9 in social sciences, teaching, and primary occupations to over 20 in science and engineering, and clerical occupations. The latter occupations also had large majorities of employees using computers. In terms of industry, agriculture had very low weekly hours (about 5), compared with a high of 21 in business services. In the labour force generally, nearly half the computer users operated their machines 11 hours or less weekly; almost two-fifths used them 20 hours or more.

Five occupations reported a weekly average of 20 or more hours of computer use. Mathematics, statistics, systems analysis and related occupations typically required about 31 hours of computer use weekly. Following a close second were office machine and EDP operators, at 29 hours a week. Other jobs with 20 or more hours of use in a week were all within the clerical category.

Undoubtedly many mathematicians, statisticians and systems analysts, as well as EDP equipment operators and other clerical workers, are heavily dependent on computers. However, the 1989 GSS does not reveal how workers in different occupations defined computer use when answering the question: "How many hours per week do you normally use [computer] equipment?" Further research into this issue will likely reveal significant differences in how, for example, the work time of systems analysts and data entry clerks is actually spent "on a computer".

Table 5

Average weekly hours of mainframe, personal computer, or word processor use on the job, by occupation and sex, 1989

	Male	Female	Total
	hours		
All occupations	14.5	18.0	16.2
Managerial/administrative	13.4	16.7	14.6
Science/engineering	22.5	23.8	22.8
Social sciences	8.0	8.8	8.3
Teaching	10.3	6.6	8.5
Medicine/health	10.7	13.4	12.6
Artistic/literary	17.3	19.7	18.4
Clerical	21.0	20.9	20.9
Sales	12.3	14.9	13.6
Service	10.0	18.0	12.2
Primary	9.2	-	8.9
Manufacturing/processing	11.5	-	13.2
Construction/transportation	10.6	-	13.3

Source: General Social Survey

Impact of computers or automated technology on work

The 1989 GSS also examined the impact of technological change on work. Individuals employed at the time of the survey were asked: "In the last five years, how much has your work been affected by the introduction of computers or automated technology? Would you say ... Greatly? Somewhat? Hardly? Not at all?" It is important to note the wider focus here on computers or automated technology, compared with the narrower definition of technology used to document computer use.

Less than one-third (about 3.6 million individuals) reported that their work had been greatly affected. Another 15% (or 1.9 million) said it had been somewhat affected. About 14% experienced a few effects, but the largest group – roughly 42% of all employees, just under 5.3 million individuals – encountered no effects at all (Table 6).

There are several notable provincial variations in the impact of computers and automation. Those employees who were affected greatly or somewhat, more likely lived in Alberta, Nova Scotia or British Columbia. Employees in New Brunswick, Quebec and Newfoundland had the highest proportions reporting that their work had not been affected at all by the introduction of computers or automation in the previous five years.

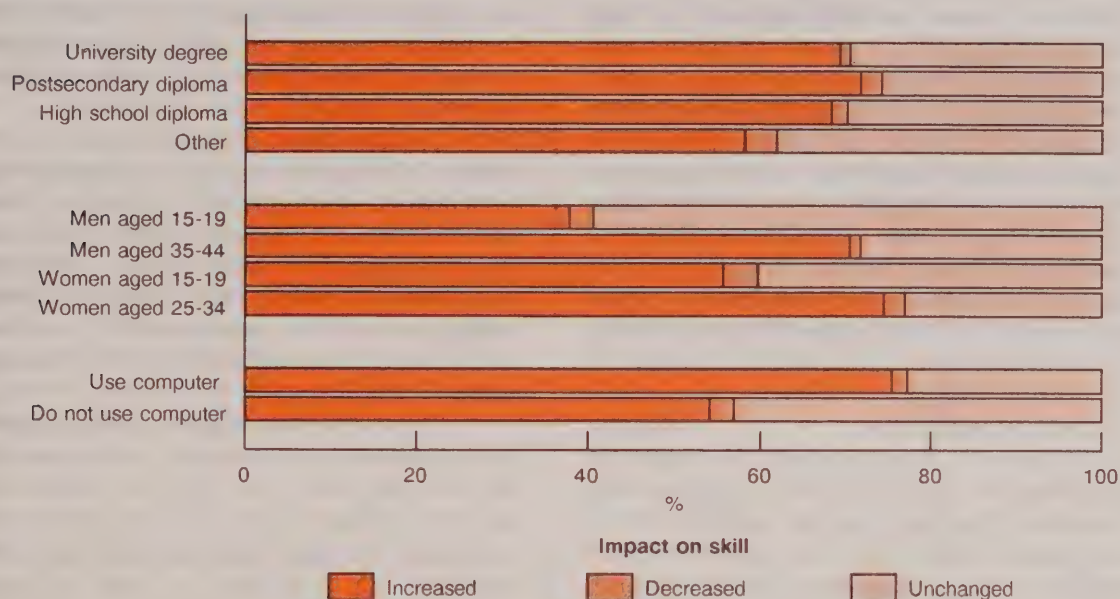
Looking at the impact on major occupational groups, managerial and professional employees encountered the greatest changes because of technology in the previous five years, followed by clerical, sales, and service workers. The impact was least in blue-collar occupations. In the managerial and professional category, a substantially higher proportion of males than females (45% and 29%, respectively) reported that their work had been greatly affected by computers or automation. This no doubt reflects the male domination of management, science and engineering occupations, all of which have experienced rapid technological changes.

A more detailed analysis found six occupations in which over 70% of employees reported no effects of automation. Three of these were lower-level personal service jobs. The other three occupations were in the goods-producing sector: jobs in wood, rubber and plastics manufacturing, which probably underwent automation before the 1980s; clothing production, which remains labour intensive and low technology; and food and beverage processing.

In contrast, the six occupations experiencing the greatest impact were those previously identified as having very high levels of computer use. The one exception is university teaching. On the whole, these high use levels are likely associated with the recent introduction of new technologies.

Perceived impact of computers or automation on skill level in last five years*

Even non-users reported increased skill levels because of the introduction of computers.



Source: General Social Survey, 1989

* Employees affected by automation.

Table 6
Impact of introduction of computers or automated technology, 1989

	Employees reporting that their work had been:			
	greatly affected	somewhat affected	hardly affected	not at all affected
	%			
Canada	28.0	14.9	14.4	41.9
Newfoundland	17.6	18.1	17.6	46.5
Prince Edward Island	-	-	-	-
Nova Scotia	29.5	18.9	14.4	36.6
New Brunswick	21.4	13.7	12.7	51.5
Quebec	26.2	9.4	16.1	47.6
Ontario	29.1	14.9	11.9	43.2
Manitoba	25.4	19.6	15.3	39.4
Saskatchewan	24.6	18.7	21.7	34.0
Alberta	31.2	21.0	16.6	31.1
British Columbia	30.5	16.9	15.3	36.0

Source: General Social Survey

Employees currently using computers were far more likely than non-users to have experienced the impact of automation in the preceding five years. Among computer users, 63% had been greatly affected by the introduction of computers or automated technology. Interestingly, an almost identical proportion (61%) of employees not using computers reported no effects of technological change. Only 1 in 10 non-users said they had been greatly affected. The most obvious explanation for this is that the question on computer use was restricted to basic office technologies, whereas the impact of computers was measured in more general terms by including automated technology.

Impact on job skills

A key issue in debates about the impact of technological change is skill requirements. Analysts offering a critical perspective on technology claim it tends to lower skill levels.¹⁰ Yet, a growing body of research refutes such technological determinism, arguing that technology has the potential to upgrade skill requirements, depending on how work is reorganized.¹¹

Employees reporting that their work had been affected by technological change were asked about its impact on work skills. Two-thirds said that computers and automation had resulted in increased skills. Almost none reported a decrease, while 29% experienced no effect.

In terms of occupations, mathematics, statistics, and systems analysis; physical and life science jobs; along with two clerical groups (office machine and EDP operators, stenographers and typists) experienced the greatest increases in skill levels. Over 50% of employees in these occupations reported an increase. Not only do these employees use computers extensively, but the process of technological innovation has also generally upgraded their skills.

Using three broad occupational groups – managerial and professional; clerical, sales, and service; and blue-collar – provides some evidence of sex differences in the effects of automation on skills. In particular, women in clerical jobs experienced a greater increase in skill requirements than men.

On the whole, employees who experienced skill upgrading due to automation tended to be relatively well educated. They were also concentrated in the baby-boom age cohort. Among men, those aged 35 to 44 were more likely to report skill increases, while among women the greatest skill improvements were reported in the 25 to 34 age group.

Three-quarters of on-the-job computer users reported increased skill requirements. But so did just over half of those not currently using computers. This discrepancy may have resulted from the wording of the questions on computer use and impact. Another possibility is that these individuals may have used computers at some point in the previous five years and associated skill increases with this. Equally plausible, the reorganization of work units that sometimes accompanies automation may have indirectly increased skill requirements for some employees.¹²

Nor should we rule out the possibility of a positive bias towards new technology. Canadians are receptive to technology, so it may be that when automation occurs in a workplace, even those not directly affected will tend to view the changes in a positive light. Obviously, all these hypotheses demand further investigation.

Impact on job security

Fewer than 1 in 5 employees affected by technological change had benefited from increased job security due to automation. In fact, over two-thirds encountered no change.

Only 1 in 10 reported decreased job security. However, blue-collar workers were somewhat more likely to have experienced a decrease in job security due to automation than employees in managerial and professional, or clerical, sales, and service occupations.

Before jumping to the conclusion that automation in Canadian workplaces during the second half of the 1980s had little effect on job security, we must point out that only employed individuals answered these questions. Thus, anyone who had lost a job because of technological change and was not employed at the time of the survey was not included. Still, the employed showed little concern about new technologies undermining job security.

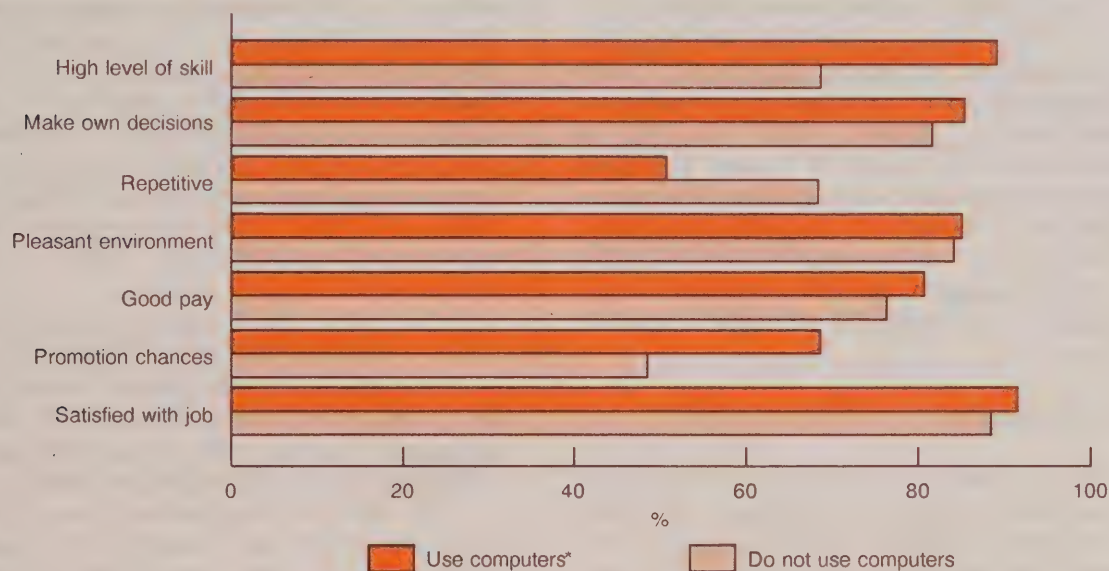
Impact on intrinsic interest

The impact of automation on the intrinsic interest of work, as with skill, was positive overall. Fully 60% of the employees affected by automation reported that it had made their duties more interesting. Almost none reported the opposite. Individuals in managerial and professional occupations were somewhat more likely to say that their work had become more interesting; blue-collar workers were least likely.

Comparing men and women, in the managerial and professional occupations a higher proportion of men reported increased intrinsic interest. But the reverse held true for clerical, sales, and service jobs. This follows the pattern observed for skill increases.

Job perceptions of employees, 1989

Computer users tended to view their jobs more positively than non-users.



Source: General Social Survey

* Mainframes, personal computers, word processors

Technological change and job loss

The survey also touched briefly on the issue of technologically induced job loss. While the results are generally informative, they point to the need for a more comprehensive investigation.

Anyone who had lost a job during the 1984 to 1989 period was asked the reason. Of the 2.4 million workers who had lost jobs, less than 1% cited the introduction of new technology. But the causes of job loss are often numerous and complex, so some workers may not have known all the factors responsible. Still, the impact of new technology seems minor.

Another 948,000 workers (7.5% of those employed at the time of the survey) expected to be laid off or to lose their jobs in the next year. Of these, only 79,000 thought this would be a result of the introduction of computers or automated technology. In the Canadian labour force, then, fears about being future victims of advancing technology were negligible, at least in early 1989.

This is not to downplay any negative personal consequences for those 79,000 individuals who anticipated technological redundancy. Indeed, this number is equivalent to dozens of Canada's largest factories, stores or offices closing their doors for good. Viewed from this perspective, these findings do not contradict the negative impact on employment levels found in case studies of technological change in specific firms.¹³

Discussion

One in three employees uses a mainframe computer, personal computer, or word processor for an average of about 16 hours a week. Proportionally more women than men are computer users. Better educated

workers, and those in the baby boom generation, also have levels of computer use above the labour force average.

In venturing any conclusions from the 1989 GSS, we must remember the limitations imposed by the different definitions of automation used and the latitude possible in respondents' interpretations of the various questions.

The profile of computer users includes a combination of employment conditions and specific job characteristics typically associated with "good jobs".¹⁴ Corroborating this positive image of automation is the finding that the most technologically intensive jobs are at the upper levels of the occupational hierarchy. But lower-level white-collar jobs, especially in the predominantly female clerical occupations, also appear to have reaped some benefits from automation. This is especially true regarding increased skill requirements and intrinsic interest.

More research is required, however, to explore how computerized work is associated with various job rewards and opportunities. Additional information on how workers perceive technological change is also needed. Most contentious is the issue of skill. For example, automation may appear to workers to be upgrading skills because of the need to learn new things, even though objective measures of job skills before and after technological change may point to a decline.¹⁵

In 1985, the Economic Council of Canada estimated that 13% of the work force used new automated technologies directly in their work.¹⁶ On this basis, the 1989 GSS documents a remarkable increase in computer use in the second half of the 1980s.

In short, the experiences of employed Canadians with the recent and rapid introduction of new technologies in the workplace do not fit the gloomy scenarios of

widespread de-skilling and job loss. However, given the concentration of computers in a relatively small number of "good" jobs, it is entirely possible that technological change is increasing the polarization between good and bad jobs in the labour market.

Workplace automation also has an important human capital dimension. About half of adult Canadians can operate a computer, with the vast majority of these users able to do more than just play

computer games.¹⁷ Is this relatively extensive computer literacy being utilized in the workplace? The answer is no. Only about 55% of individuals in the labour force who have the ability actually use computers at work. Clearly, not all jobs can be computerized. Even so, a broader utilization of untapped human resources could accelerate the pace of the micro-electronics revolution. And based on 1989 GSS evidence, this advancing automation has the potential to upgrade the content of jobs. □

Notes

¹ This article is based on chapter 5, "Computers in the workplace" from G.S. Lowe, *Education, work, computers, and retirement: challenges for the 1990s* (Summer 1991).

² Compare, for example, C.B. Handy, *The future of work: a guide to a changing society* (1984); S. Zuboff, *In the age of the smart machine: the future of work and power* (1988); L. Hirschhorn, *Beyond mechanization: work and technology in a postindustrial age* (1984) with R. Howard, *Brave new workplace* (1985); B. Garson, *The electronic sweatshop: how computers are transforming the office of the future into the factory of the past* (1988); C.C. Rochell and C. Spellman, *Dreams betrayed: working in the technological age* (1987).

³ See G. Betcherman and K. McMullen, *Working with technology: a survey of automation in Canada* (1986); Economic Council of Canada, *Innovation and jobs in Canada: a research report* (1987).

⁴ Betcherman and McMullen, op. cit., p. 17, report that in the 1980 to 1985 period 65% of all automation in their sample of Canadian firms was in the office. The GSS examines this kind of automation.

⁵ See G.S. Lowe, *Canadian social trends* (Winter 1990).

⁶ Economic Council of Canada, *Innovation and jobs in Canada: a research report*, p. 39.

⁷ Betcherman and McMullen, loc. cit.

⁸ Economic Council of Canada, *Good jobs, bad jobs: employment in the service economy: a statement* (1990).

⁹ On the polarization thesis see: J. Myles, *The Canadian review of sociology and anthropology* (1988); J. Myles, G. Picot and T. Wannell, *The labour force* (1988); N. Leckie, *The declining middle and technological change: trends in the distribution of employment income in Canada, 1971-84* (1988).

¹⁰ The clearest expression of this position is H. Braverman, *Labor and monopoly capital: the degradation of work in the twentieth century* (1974). For a critical assessment of the de-skilling debate see P. Attewell, *Work and occupations* (1987).

¹¹ See, for example, Hirschhorn, loc. cit.

¹² However, available evidence suggests that innovative organizational changes likely to have an upgrading effect on skills typically do not accompany automation in Canadian firms. See K. Newton, *New technology, work and employment* (1989).

¹³ See, for example, D. Robertson and J. Wareham, *Technological change in the auto industry: CAW technology project* (1987).

¹⁴ Economic Council of Canada, *Good jobs, bad jobs: employment in the service economy: a statement* (1990).

¹⁵ M. Wallace, *Work and occupations* (1989).

¹⁶ K. Newton, op. cit., p. 42.

¹⁷ Lowe, loc. cit.

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Dependence on government transfer payments, 1971-1989

Raj K. Chawla

In 1989, federal, provincial and local governments together spent \$75.9 billion in cash transfers to persons under various income security programs in Canada – an increase of 156% in 1989 dollars since 1971.¹ This represents 11.6% of the total value of goods and services produced in the country in 1989 compared with 8.5% in 1971.

Per capita transfer payments have grown more rapidly than per capita national income. (A summary of the various types of payments is given in *Income security programs in Canada*.) Similarly, expenditures on social security per employed person aged 25 years and over rose from \$4,834 in 1971 to \$7,505 in 1989, an increase of 55% (all dollar amounts in this paper are in 1989 dollars²). These indicators show that government expenditure on social security programs rose substantially between 1971 and 1989.

Who benefits from these payments? What proportion of the total payments is received by low-income families and unattached individuals? Does the increase in such expenditure imply a greater dependence on transfer payments? Has the mix of transfer payments changed? If so, what has caused such a change? Do transfer payments

alleviate poverty? This paper addresses these questions, using data from the Survey of Consumer Finances (see *Source of data*).

The importance of transfer payments to unattached individuals³ and to families is highlighted separately, for two reasons. First, unattached individuals as a proportion of all households have grown from 25% in 1971 to 31% in 1989 (Table 4). And second, unattached individuals are not eligible for certain transfer payments available to families (for example, Child Tax Credit and Spouse's Allowance). Because incomes of unattached individuals average about 58% less than those of families with two or more persons,⁴ any comparison of ratios of transfers to total income for these groups should recognize this average income difference.

Dependence on transfer payments

Dependence on government transfer payments is measured by the ratio of such payments to total income. This ratio may vary between 0% (no dependence) and 100% (complete dependence).

In both 1971 and 1989, 15% of all unattached individuals and about 4% to 5% of all families were totally dependent on government transfer payments. At the other extreme, the proportion of unattached individuals without any form of transfer

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Income security programs in Canada

Canadian income security programs can be categorized into five broad groups: (1) *age-related* – Old Age Security, Guaranteed Income Supplement, and Spouse's Allowance; (2) *employment-related* – Canada and Quebec Pension Plans, Unemployment Insurance, manpower training allowances, and Workers' Compensation; (3) *family-related* – Family Allowance and refundable Child Tax Credit; (4) *means-tested* – refundable federal sales tax and provincial tax credits, and social assistance; and (5) *other* – pensions to the blind, the disabled, and veterans.

Benefits from most of these programs are adjusted using the Consumer Price Index (CPI), but the adjustment factor may vary from program to program. For instance, Old Age Security, Guaranteed Income Supplement and Spouse's Allowance are indexed each quarter by the rate of growth in the CPI, but benefits from the Family Allowance program are indexed by the annual rate in excess of 3%. Benefits from the Canada and Quebec Pension Plans are adjusted by the increase in the CPI for the 24-month period ending October 31 of the preceding year. For details about other programs, see Health and Welfare Canada's booklet, *Basic Facts on Social Security Programs*, July 1989.

Benefits from Canada and Quebec Pension Plans

Why are benefits from the Canada and Quebec Pension Plans treated as transfer payments when such benefits are related to tenure of employment and level of earnings? The answer lies in the conceptual framework used by the System of National Accounts (SNA), which treats contributions paid to and benefits from these plans as an integral part of the government sector. Employer and employee contributions to the plans are transfers from the private to the public sector. Benefits are therefore treated as part of government transfers to persons.

Source of data

Data in this paper were drawn from the Survey of Consumer Finances conducted in April 1972 and 1990. This annual survey, piggybacked to the monthly Labour Force Survey, collects data on sources and amounts of incomes received by all persons aged 15 years and over residing in private households in the 10 provinces. Excluded are persons living in the Yukon and Northwest Territories, on Indian reserves, or in nursing homes and other institutions. Also, excluded from the tables are unattached individuals and families whose major source of income was military pay and allowances. Annual statistics from this survey are published in *Income Distributions by Size in Canada* (Statistics Canada, Catalogue No. 13-207).

Since this survey does not collect data on transfers in kind (subsidized rents or transportation, prescribed drugs, dental and eye care, etc.), benefits

from such transfer programs are not included in this analysis. Most of these programs are income tested, and are usually administered by municipal and provincial governments.

After adjusting for major conceptual differences, the ratio of aggregate transfers estimated from the survey to the National Accounts estimate of transfers was 71% in 1971 and 79% in 1989. The relatively better reconciliation for 1989 was due to better reporting, more easily identifiable transfer components, and improvements in the capture and editing of data. Most of the gap in the two sources is attributable to differences in sample coverage, accounting periods (calendar year versus fiscal year), and above all, the effect of sampling and non-sampling errors (mainly non- and under-reporting of sources and amounts of income). The relatively better reconciliation of the 1989 survey data on transfer payments, however, was not a major factor contributing to the findings highlighted in this article.

Definitions of concepts used

Unattached individual: A person living alone or in a household where he or she is not related to other household members.

Family: A group of persons sharing a common dwelling unit and related by blood, marriage or adoption. The definition of family used in this paper is that of the "economic family".

Total income: This is the sum of incomes reported by all family members aged 15 years and over. Income consists of earnings, investment income, government transfers, private pensions, alimony, etc. All income in kind, gambling gains and losses, capital gains and losses, windfall profits, and so on, are excluded.

Total government transfers: These consist of all social welfare payments from federal, provincial and municipal governments. They may include Family Allowance, Old Age Security, Guaranteed Income Supplement, Spouse's Allowance, pensions under the Canada and Quebec Pension Plans, Unemployment Insurance benefits, Worker's Compensation, training allowances, veterans' pensions and allowances, social assistance, pensions to the blind and the disabled, and refundable tax credits (both federal and provincial).

Income quintile: Quintile data were compiled by ranking weighted survey returns in ascending order by size of total income. Then the array was divided into five equal parts or quintiles. The ranking was performed separately for unattached individuals and families.

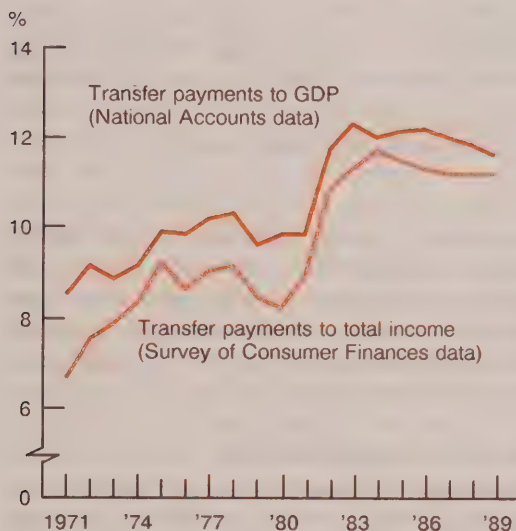
Low income: Unattached individuals or families with incomes below the pre-defined cut-offs for their family size and place of residence according to its urbanization classification are labelled as "low income"; all others with incomes equal to or above the cut-offs are labelled as "other". For low income cut-offs used in 1989, see *Income Distributions by Size in Canada, 1989: Text Table V, p. 42* (Statistics Canada, Catalogue No. 13-207).

payment fell sharply, from 62% in 1971 to 27% in 1989. For families, the proportion dropped from 22% to 12% (Table 1). While the overall proportions of unattached individuals and families fully dependent on transfer payments did not change from 1971 to 1989, the proportions of those receiving some transfers rose dramatically. This was mainly due to the introduction of refundable tax credits; namely, the federal child and sales tax credits and various provincial tax credits for sales taxes, occupancy costs and energy costs. The broadening of coverage under the Canada and Quebec Pension Plans and other transfer programs also contributed to the rise.⁵

Two key factors determine dependence on government transfer payments. First and foremost is the level of income, since several programs (such as the

Ratios of transfer payments to household income and GDP

Ratios from both data sources show a similar trend.



Sources: System of National Accounts and Survey of Consumer Finances

Guaranteed Income Supplement, Spouse's Allowance, social assistance, and refundable tax credits) are income tested. The second factor is the life cycle (proxied by the age of the head of a family), since those under 25 years old or 65 years and over are more likely to have no source of personal income other than government transfer payments. The former group may comprise unattached individuals attending vocational training courses on government allowances or subsisting on social assistance before getting any paying jobs, whereas the latter group may include retirees without any income from investments or private pensions.

Dependence by income quintile

Among unattached individuals in the lowest income quintile, 42% received some cash transfers in 1971 compared with 94% in 1989. Such a dramatic change in the proportion of individuals with at least one transfer payment was largely the result of changes in the age-mix of individuals in this quintile: the proportions constituting the young and the old shrank by 9 percentage points while that of individuals in the 25 to 44 age group rose by 11 percentage points. Individuals in the latter group are more vulnerable to labour market related problems such as low earnings and instability of employment. They are more likely to receive unemployment insurance and refundable tax credits. Even among individuals in the highest income quintile, the proportion who received transfers rose from 14% in 1971 to 32% in 1989 (Table 1). The proportion of unattached individuals whose incomes consisted solely of government transfers, however, rose from 29% to 46% in the lowest income quintile.

The changes in the proportions of families who received transfers were not as large as for unattached individuals. Since most of these families were in the 25 to 64 age group and had children under 18 years of age, they all received the universal Family

Table 1
Relative dependence* on transfer payments by selected characteristics, 1971 and 1989

Characteristics	1971				1989			
	0%**	1-99%	100%	Total	0%**	1-99%	100%	Total
%								
Unattached individuals								
Total	61.7	23.6	14.7	100.0	27.0	57.8	15.3	100.0
Income quintiles								
Lowest	58.2	13.2	28.6	100.0	6.5	47.1	46.5	100.0
Second	23.5	34.1	42.4	100.0	0.5	71.8	27.7	100.0
Middle	58.3	39.0	2.7	100.0	13.2	84.9	1.9	100.0
Fourth	82.2	17.8	0.0	100.0	47.0	52.7	0.3	100.0
Highest	86.5	13.5	0.0	100.0	67.7	32.3	0.0	100.0
Age								
Under 25 years	87.3	11.2	1.5	100.0	26.1	71.5	2.4	100.0
25-64 years	81.2	11.4	7.4	100.0	40.4	49.0	10.6	100.0
65 years and over	1.8	42.2	40.4	100.0	0.2	69.2	30.6	100.0
Families 2 +								
Total	22.4	73.0	4.6	100.0	12.3	84.0	3.7	100.0
Income quintiles								
Lowest	15.4	62.1	22.5	100.0	3.0	78.6	18.4	100.0
Second	19.6	79.9	0.5	100.0	8.8	90.8	0.3	100.0
Middle	22.0	78.0	0.0	100.0	13.5	86.5	0.0	100.0
Fourth	25.6	74.4	0.0	100.0	16.9	83.1	0.0	100.0
Highest	29.3	70.7	0.0	100.0	19.1	80.9	0.0	100.0
Age of head								
Under 25 years	44.9	51.1	4.0	100.0	20.3	72.7	6.9	100.0
25-64 years	23.7	73.4	2.9	100.0	14.0	83.6	2.4	100.0
65 years and over	1.5	82.4	16.1	100.0	0.5	89.1	10.4	100.0

Source: Survey of Consumer Finances

* Measured in terms of the ratio of government transfer payments to total family income.

** Includes a small number of self-employeds who reported income losses during the reference years.

Allowance. Therefore, the proportion of families who received at least one transfer payment would be largely unaffected by the availability of additional transfer payments.

Among families in the highest income quintile, 71% received some transfers in 1971 compared with 81% in 1989. Part of this increase may be attributable to the growth in the number of families with multiple labour force participants who may have been eligible for Unemployment Insurance benefits (for unemployment, maternity, job training, and so on) or Spouse's

Allowance. Among families in the lowest income quintile, 97% received transfers in 1989 compared with 85% in 1971. For about one-fifth of all such families, government transfers constituted 100% of their total income in both years.

Dependence by life cycle

Government transfers play a vital role in protecting the economic well-being of older unattached individuals as well as families with older heads (65 and over). In 1971, 40% of all older unattached individuals and 16%

of families with heads aged 65 and over received their total incomes from transfers. Eighteen years later, these proportions had declined to 31% and 10%. This drop may be partly attributable to the proliferation of benefits accruing from coverage under employer-sponsored pension plans and ownership of Registered Retirement Savings Plans.⁶

More non-elderly unattached individuals and families received transfers in 1989 than in 1971. Among unattached individuals less than 25 years old, only 13% received at least one type of transfer payment in 1971 compared with 74% in 1989 (Table 1). This dramatic rise may be attributable to several factors including lower incomes, high unemployment, or a lack of job opportunities. As a result, these individuals might have received benefits from job-training programs, refundable provincial or federal sales tax credits, or other social assistance.

Transfer payments by type

Two major developments took place over the 1971 to 1989 period. First, the proportion of unattached individuals as well as of families receiving payments under the Canada and Quebec Pension Plans rose dramatically. As these plans have expanded their coverage, more and more persons have become eligible to receive benefits (see note 5). For example, 25% of all unattached individuals received such pension benefits in 1989 compared with only 4% in 1971; the corresponding proportions for families were 20% and 4% (Table 2).

Second, the introduction of several refundable tax credit schemes to assist low- and middle-income families contributed to the growth in the proportion receiving transfer payments. For example, the amount spent on the Federal Sales Tax Credit in 1989 was only \$629 million out of total transfers of \$47.4 billion, but more than half of all unattached individuals and one-third

of all families claimed this credit (Table 2). Also in 1989, 50% of all families received family allowances. But only 31% claimed the Child Tax Credit. Family allowances are taxable and are paid to families regardless of income, whereas child tax credits are not available above a pre-defined maximum family income level. Nevertheless, both count as transfer payments.

More people received social assistance (including provincial and municipal assistance) in 1989 than in 1971. Since this assistance is aimed at helping individuals and families with very low or no other personal incomes, a greater incidence may indicate hardship (caused by lack of jobs, high unemployment, family dissolution, and so on) or improvements in social benefits. Unattached individuals are more likely to receive such assistance because they do not have the income support usually available to members of families with multiple-income recipients. One in seven individuals received social assistance or provincial income supplements in 1989 compared with one in seventeen in 1971; the proportions for families were 9% and 6%.

Among recipients of transfer payments, unattached individuals received, on average, 24.3% more in benefits in 1989 than in 1971, while families received 95.4% more (Table 2).

Composition of total transfers

So far this article has looked at changes in the proportions of unattached individuals and families who received at least one transfer. Now the change in the composition of total transfers over the 1971 to 1989 period will be discussed.

In 1971, 85% of total transfers to families and 90% of those to unattached individuals came from the general revenue funds of governments. These are benefits from programs such as Old Age Security, Guaranteed Income Supplement, social assistance and Family Allowance, for which

Table 2
Transfer payments by components, 1971 and 1989

Type of family unit and transfer payments	Proportion who received transfer payments		Average amount received (in 1989 dollars) (recipients only)		Composition of transfer payments	
	1971	1989	1971	1989	1971	1989
	%		\$		%	
Unattached individuals						
Canada/Quebec pension plans (CPP/QPP)	3.8	24.8	1,668	3,745	4.0	24.6
Old age security*	25.5	29.0	4,388	5,835	70.2	44.8
Unemployment insurance benefits	4.4	10.3	1,947	3,935	5.4	10.7
Family allowances	...	...	...	...	...	...
Social assistance	5.8	13.7	3,059	3,129	11.2	11.3
Other income from government**	3.9	13.0	3,745	1,693	9.1	5.8
Provincial tax credits	...	19.7	...	239	...	1.2
Child tax credits	...	...	...	...	...	...
Sales tax credits	...	53.8	...	101	...	1.4
Total	38.3	73.1	4,162	5,172	100.0	100.0
Aggregate transfers (in 1989 dollars) (\$Million)	...	...	...	...	2,753	12,091
Families 2 +						
Canada/Quebec pension plans (CPP/QPP)	4.4	19.9	1,943	5,128	3.8	20.5
Old age security*	15.1	16.8	6,084	7,534	40.8	25.4
Unemployment insurance benefits	10.2	25.2	2,252	4,494	10.2	22.8
Family allowances	59.6	50.5	774	765	20.5	7.8
Social assistance	6.0	9.1	5,605	5,087	15.0	9.3
Other income from government**	5.1	11.3	4,272	2,919	9.7	6.6
Provincial tax credits	...	19.2	...	256	...	1.0
Child tax credits	...	30.8	...	866	...	5.4
Sales tax credits	...	35.6	...	181	...	1.3
Total	77.6	87.8	2,900	5,666	100.0	100.0
Aggregate transfers (in 1989 dollars) (\$Million)	...	...	...	...	11,498	35,270

Source: Survey of Consumer Finances

* Includes guaranteed income supplements and regular or extended spouse's allowances.

** Includes manpower training allowances, worker's compensation and pensions to veterans, the blind and the disabled, etc.

no direct contributions are paid by workers or employers. By 1989, the proportions had dropped to 57% and 65%. Although more than one-half of total transfers were still financed from general revenue funds, governments' direct costs of total transfers to persons had declined. This was largely due to changes in the funding of certain transfer programs and cutting back on benefits for high-income families from previously universal programs.

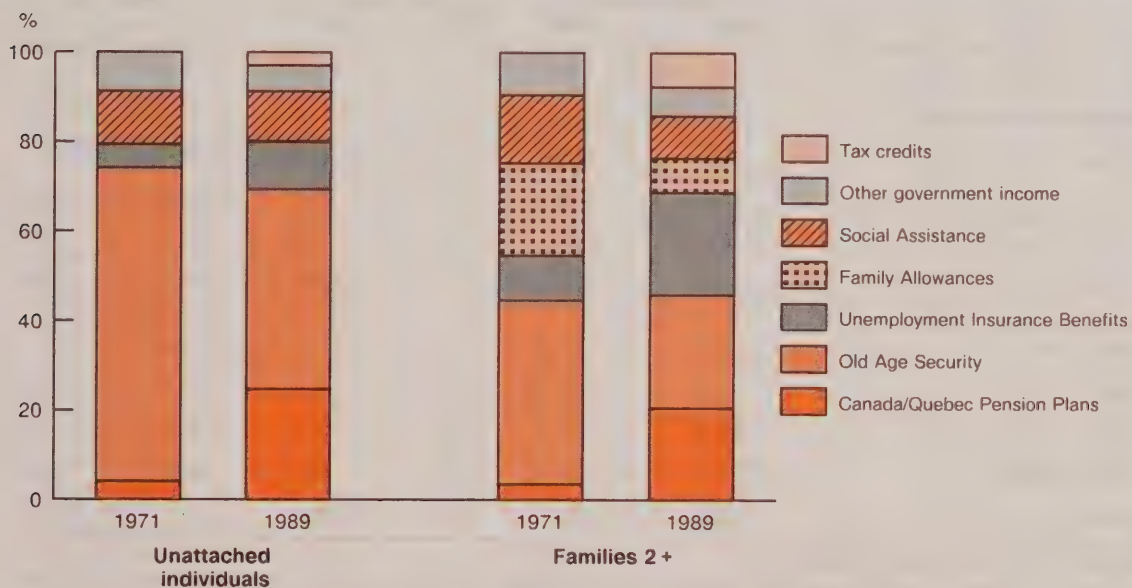
For example, the Canada and Quebec Pension Plans are self-financed. Administrative costs and benefits are paid from employee and employer contributions and income earned from investment of accumulated funds. The Unemployment Insurance plan, however, is not yet totally self-financed – some benefits to long-term unemployed in

economically depressed areas are paid from general revenue. However, employee and employer contributions to these plans have also been increasing. To further reduce the costs of transfers paid from general revenue, the federal government has recently introduced measures to tax back benefits from Old Age Security and Family Allowance programs, starting with incomes in excess of \$50,000.⁷

For both unattached individuals and families, most of the drop in the proportion of benefits from Old Age Security (including Guaranteed Income Supplement and Spouse's Allowance) was compensated for by the increases in benefits from Canada or Quebec Pension Plans, social assistance and the introduction of several refundable tax credits. The proportion of family allowances

Percentage composition of transfer payments

Relative declines in Old Age Security and Family Allowance benefits have been offset by increases in Canada/Quebec Pension Plans and tax credits.



Source: Survey of Consumer Finances

in transfers to families dropped because of a decline in the number of families with children. The proportion of benefits from Unemployment Insurance, on the other hand, rose due to an increasing number of labour force participants who experienced unemployment, job sharing, job training, maternity, and so on (Table 2).

Multiple transfer payments

Significant shifts have occurred in the proportions of unattached individuals and families receiving three or more types of transfers – 1% and 3% in 1971; 24% and 28% in 1989. Among recipients of transfers in 1971, 86% of all unattached individuals and 75% of families received only one type of transfer: Old Age Security for unattached

individuals, and Family Allowance for families. The dramatic rise in the proportion of those receiving three or more transfers in 1989 can be largely attributed to several refundable tax credits currently available to low- and middle-income families.

The amount of transfers received is affected by income level and demographic variables which, in turn, determine the types and amounts of benefits received. For example, in 1989, each dollar of income for families receiving three or more transfers consisted of 26 cents of transfer payments compared with only 3 cents for families receiving only one type of transfer. For unattached individuals the amounts were 60 cents and 12 cents.

Table 3
Overview of recipients of one or more transfers, 1971 and 1989

Number of transfer payments received*	Distribution of recipients		Distribution of aggregate transfers		Transfer payments to income ratio	
	1971	1989	1971	1989	1971	1989
%						
Unattached individuals						
One	86.1	46.5	80.3	19.2	38.4	12.5
Two	13.1	29.8	18.0	37.6	54.3	43.4
Three or more	0.8	23.6	1.7	43.2	52.7	59.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
Families 2 +						
One	74.9	29.1	45.5	9.8	4.6	3.1
Two	21.8	42.9	44.3	37.2	20.6	11.1
Three or more	3.3	28.0	10.2	53.0	29.7	26.3
Total	100.0	100.0	100.0	100.0	8.1	11.7

Source: Survey of Consumer Finances

* In order to reduce the number of possible combinations of transfer payments, we considered only five types of benefits from programs, namely, Family Allowances, Canada/Quebec Pension Plans, Unemployment Insurance, Old Age Security, and the rest (ie. Social Assistance and/or Tax Credits and/or other transfers not shown separately).

Where did the total transfers go?

In 1971, unattached individuals, accounting for 25% of all households, received 19% of total transfers, compared with 31% receiving 26% of total transfers in 1989. This shows that families, on the whole, received proportionately more benefits than their representation among all households.

Of the total transfers paid to unattached individuals, those 65 years and over received 77% in 1971 but only 67% in

1989. Such transfers made up 47% of their total income in 1971 compared with 54% in 1989. Since more unattached individuals in the 25 to 64 age bracket received transfers in 1989 than in 1971, their overall share of the total transfers also rose, raising their transfer/income ratio from 3% to 8%.

In both years, more than half of the transfer payments went to families with heads aged 25 to 64 years and about 40% to those with heads 65 years old and over. The overall average transfer payment received

Table 4
Selected statistics on transfer payments by age of head, 1971 and 1989

		1971				1989			
		24 years or less	25-64 years	65 years and over	Total	24 years or less	25-64 years	65 years and over	Total
Unattached individuals									
Estimated number	('000)	398	877	454	1,729	425	1,857	918	3,199
Distribution	(%)	23.0	50.7	26.3	100.0	13.3	58.0	28.7	100.0
Proportion received transfer payments	(%)	12.7	18.8	98.2	38.3	73.9	59.7	99.8	73.1
Distribution of recipients	(%)	7.6	25.0	67.5	100.0	13.4	47.4	39.2	100.0
Total transfers paid*	(\$ Million)	78	552	2,122	2,753	415	3,611	8,064	12,091
Distribution of transfers	(\$)	3.0	21.1	81.0	105.0	3.4	29.9	66.7	100.00
Overall average transfer payment*	(\$)	196	630	4,676	1,592	978	1,945	8,785	3,779
Ratio of transfer payment to income	(%)	1.6	3.1	47.2	10.2	6.6	7.8	53.8	17.9
Families 2+									
Estimated number	('000)	331	4,157	620	5,107	247	5,820	1,022	7,089
Distribution	(%)	6.5	81.4	12.1	100.0	3.5	82.1	14.4	100.0
Proportion received transfer payments	(%)	55.1	76.3	98.5	77.6	79.7	86.1	99.5	87.8
Distribution of recipients	(%)	4.6	80.0	15.4	100.0	3.2	80.5	16.3	100.0
Total transfers paid*	(\$ Million)	371	6,651	4,476	11,498	825	20,426	14,018	35,270
Distribution of transfers	(%)	3.4	60.7	40.9	105.0	2.3	57.9	39.7	100.0
Overall average transfer payment*	(\$)	1,121	1,600	7,222	2,251	3,336	3,510	13,719	4,975
Ratio of transfer payment to income	(%)	4.0	4.1	29.7	6.1	10.7	6.6	36.6	9.9

Source: Survey of Consumer Finances

* In 1989 dollars

by families in each of these two groups nearly doubled over the 1971 to 1989 period. Transfer payments made up 30% of the total income of older families in 1971, and 37% in 1989.

Transfers received by type of family

Transfer payments are highly concentrated among husband-wife families. They received 64% of total transfers in 1971 and 61% in 1989. The proportions with at least one transfer payment increased from 77% to 86% over the same period. But since average incomes of husband-wife families are also usually higher than incomes of other types of families, the overall contribution of transfer payments to their incomes remained rather small: 5% in 1971, 9% in 1989.

Almost all husband-wife families with children under 18 years received transfer payments, but these accounted for only 4% of their total income in 1971 and 6% in 1989.

The respective ratios for married couples only (a mix of younger and older couples without children) were 8% and 14% (Table 5).

In both 1971 and 1989, the overall proportion of female-headed lone-parent families who received transfers was almost the same as that for husband-wife families with children (largely because most of them received family allowances). The difference between the two groups of families, however, was found in the ratio of government transfers to total family income. This was three to seven times higher for female-headed lone-parent families than for husband-wife families (Table 5). This higher ratio for lone-parent families headed by women reflects their relatively smaller income base.

Compared with husband-wife families with single children, female-headed lone-parent families averaged 3.2 times more in

Table 5
Transfer payments by type of family unit, 1971 and 1989

Type of family unit	Proportion who received transfer payments		Distribution of total transfer payments		Overall average transfer payments in 1989 dollars		Ratio of transfer payments to income	
	1971	1989	1971	1989	1971	1989	1971	1989
			%		\$		%	
Unattached individuals	38.3	73.1	19.3	25.5	1,592	3,779	10.2	17.9
Husband-wife families	76.8	86.4	64.0	61.3	1,982	4,760	5.1	9.0
Married couples only	41.7	67.2	22.6	28.1	2,472	5,977	7.5	13.7
Married couples with single children only*	90.7	97.3	32.2	27.6	1,512	3,654	3.8	6.4
Others**	90.4	98.2	9.3	5.6	4,928	8,966	10.6	13.5
Lone-parent families	87.6	98.3	10.5	8.3	4,410	5,804	20.9	19.5
Male head	79.1	97.3	0.9	1.0	2,436	4,695	7.4	10.7
Female head	89.1	98.5	9.6	7.3	4,759	5,996	25.0	21.9
Other families	79.8	93.1	6.2	4.8	5,314	7,439	18.6	18.0
Families 2 +	77.6	87.8	80.7	74.5	2,251	4,975	6.1	9.9
All family units	67.7	83.2	100.0	100.0	2,085	4,603	6.6	11.2

Source: Survey of Consumer Finances

* Children irrespective of age

** Includes married couples with single and married children, and/or with other relatives.

transfers in 1971 but only 1.6 times more in 1989. Overall, such lone-parent families accounted for 10% of total transfers in 1971 compared with only 7% in 1989.

Over the 1971 to 1989 period, the ratio of transfers to total income dropped for lone-parent families headed by females, as relatively more of them were working in 1989 than in 1971, making earnings their major source of family income. Another factor that may have contributed to the drop in the transfers/income ratio is the improvement in laws governing the division of matrimonial property when a marriage is dissolved. Alimony payments and other

financial support provided by natural fathers to children in custody of single or separated mothers may also have contributed.⁸

Change in overall average transfer payments

Unattached individuals received an average of \$2,187 more in 1989 than in 1971; families received \$2,724 more. What caused these increases in transfers paid to unattached individuals and families?

More than half the total increase can be attributed to demographic shifts (age and type of family) and the remainder to new

Table 6
Decomposition of change in overall average transfer payments, 1971 to 1989

Factors	Age of head			Total
	24 years or less	25-64 years	65 years and over	
	%			
Due to change in demographic structure of:	-0.7	23.1	28.9	51.3
Unattached individuals	0.1	5.8	12.3	18.1
Husband-wife families:				
Married couples only	-0.2	4.5	13.8	18.2
Married couples with single children only*	-1.1	5.9	1.5	6.3
Others**	-0.1	0.7	-0.1	0.5
Lone-parent families	0.4	4.6	0.7	5.6
All other families	0.2	1.7	0.7	2.5
Due to change in amounts caused by various factors†:	3.1	27.7	17.9	48.7
Unattached individuals	0.9	3.5	5.6	10.1
Husband-wife families:				
Married couples only	0.6	4.3	7.3	12.2
Married couples with single children only*	1.2	16.3	1.8	19.4
Others**	0.1	2.5	1.0	3.6
Lone-parent families	0.2	0.7	1.0	1.8
All other families	0.1	0.4	1.1	1.6
Total	2.4	50.8	46.8	100.0

Source: Survey of Consumer Finances

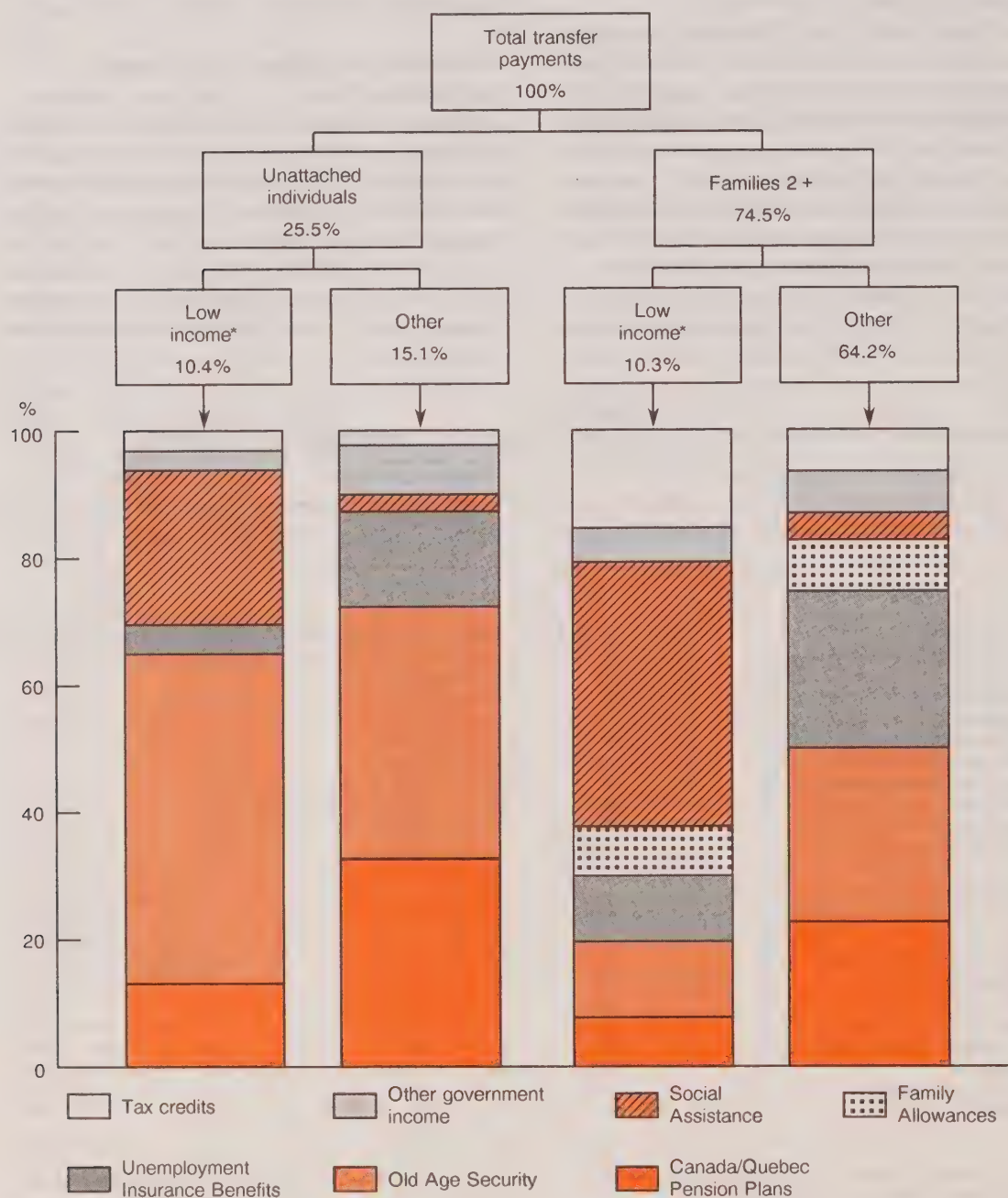
* Children irrespective of age

** Includes husband-wife families with single and married children and/or with other relatives.

† Such as changes in programs since 1971, new programs established after 1971, and maturation of some programs.

Composition of transfer payments by low-income status*, 1989

The mix of transfer payments varies considerably by income status.



Source: Survey of Consumer Finances

* See box for the definition of low-income status.

programs and changes in amounts of benefits. New transfer payments after 1971 include Spouse's Allowance, and refundable child and other tax credits. Changes in benefits can arise from changes in needs, wider eligibility for social assistance (largely provided by the provinces), or other legislative changes in benefits.⁹

Three groups were responsible for 63% of the total demographic shift: married couples with heads 65 years and over; unattached individuals 65 years and over; and families with heads in the 25 to 64 age group with single children. These groups accounted for 60% of the total change in amounts of benefits.

Do transfer payments alleviate financial hardship?

Government transfer payments reduce inequality in the distribution of income.

Since many studies¹⁰ have documented this, it is not at issue here. However, whether such transfers reduce financial hardship (measured in terms of the proportion of unattached individuals and families with low incomes¹¹) warrants consideration.

In 1989, only 20.7% of total transfers went to low-income unattached individuals and persons in families (the remaining 79.3% went to the non-low-income group). Their share of total transfers was, however, slightly higher than their proportion in the population. Among unattached individuals, 30% were in the low-income group and they received 41% of the total transfers; 10% of families were in the low-income group and received 14% (Table 7).

Unattached individuals with incomes between 80% and 120% of their low income cut-offs (identifying individuals on the fringes of low income cut-offs) received 38% of the transfers and those with incomes twice

Table 7
Selected statistics by size of ratio of family income to low income cut-off, 1989

Ratio (%) of family income to low income cut-off	Unattached individuals			Families		
	Number	Distribution of transfer payments	Ratio of transfer payments to income	Number	Distribution of transfer payments	Ratio of transfer payments to income
						%
Under 40.0	4.4	1.1	42.9	1.0	0.6	114.1*
40.0 - 79.9	14.2	18.6	68.9	5.0	7.5	61.4
80.0 - 99.9	11.8	20.9	65.3	3.6	5.7	45.2
100.0 - 119.9	10.2	17.1	52.2	4.7	8.1	41.0
120.0 - 159.9	13.0	15.5	29.3	12.4	18.1	27.0
160.0 - 199.9	10.0	7.7	14.3	12.9	14.5	15.6
200.0 and over	36.4	19.1	5.3	60.4	45.5	5.7
Total	100.0	100.0	17.9	100.0	100.0	9.9
Low-income units	30.5	40.6	66.0	9.6	13.8	54.4
Other units	69.5	59.4	11.9	90.4	86.2	8.8

Source: Survey of Consumer Finances

* Includes a small number of self-employed who reported income losses during the reference year.

the size of their cut-offs received another 19%; while 60% of all families in the latter situation received 46% of the total transfers paid to them.

Generally, the greater the deficit between actual income and the level of subsistence (measured in terms of the pre-defined low income cut-offs), the greater the financial hardship. This also implies a greater dependence on government transfer payments (measured in terms of the transfers to income ratio). For example, for families with incomes between 40% and 80% of their low income cut-offs, transfers accounted for 61% of total income compared with 45% for those with incomes between

80% and 100% of cut-offs. Overall, government transfers were the major source of income for low-income groups, accounting for 66% of total income for unattached individuals and 54% for families (Table 7).

In 1989, 974,000 unattached individuals and 682,000 families fell into the low-income category. Other things being equal, the absence of government transfers would have increased the numbers to 1,459,000 individuals and 1,483,000 families. Cash transfers from government in 1989, therefore, kept 354,000 elderly unattached individuals, 360,000 married couples with heads aged 65 or over, and 572,000 non-elderly households out of the low-income group (Table 8).

Table 8
Effect of transfer payments on incidence of low income by type of family unit, 1989

Type of family unit	Incidence of low income			Distribution of additional low-income units in absence of transfers
	Based on total income	Based on total income less transfers	Change in incidence due to transfers	
	%			
Unattached individuals	30.5	45.6	-33.1	37.7
Under 65 years	27.6	33.4	-17.4	10.2
65 years and over	37.5	76.0	-50.7	27.5
Husband-wife families	6.6	17.6	-62.5	52.1
Married couples only	5.9	25.3	-76.7	33.5
Head under 65 years	6.3	10.9	-42.2	5.5
Head 65 years and over	5.2	56.6	-90.8	28.0
Married couples with single children only*	7.3	13.1	-44.3	16.3
Others**	4.4	14.3	-69.2	2.3
Lone-parent families	35.1	46.7	-24.8	6.2
Male head	12.4	20.9	-40.7	0.7
Female head	39.0	51.2	-23.8	5.5
Other families	12.5	29.4	-57.5	4.0
Families 2 +	9.6	20.9	-54.1	62.3
All family units	16.1	28.6	-43.7	100.0
Estimated number ('000)	1,656	2,942	...	1,286

Source: Survey of Consumer Finances

* Children irrespective of age

** Includes husband-wife families with single and married children, and/or with other relatives.

The incidence of low income is much more predominant among unattached individuals and lone-parent families headed by females than among husband-wife families. Government transfers help alleviate financial hardship by providing these groups with about two-thirds of their total incomes, compared with about half for low-income husband-wife families. In the absence of such transfers, about one-half of all unattached individuals and female-headed lone-parent families likely would have fallen into the low-income category.

Summary

In both 1971 and 1989, about 15% of all unattached individuals and 4% to 5% of all families depended on government transfer payments as their sole source of income, but significant shifts have occurred in the proportions receiving three or more transfers.

Overall, transfer payments accounted for 18% of the total income of unattached individuals in 1989 compared with 10% in

1971; for families the figures were 10% and 6%. The change over this 18-year period in average transfer payments was largely attributable to two factors: (1) the demographic shift in households in terms of age mix and family type (51%); and (2) changes in benefits, arising either from programs introduced after 1971 or from changes in benefits from programs that existed in 1971 (49%).

The make-up of total transfers changed considerably over the 1971 to 1989 period. In 1971, 87% of total transfers came from general revenue funds compared with 59% in 1989. As the Canada and Quebec Pension Plans matured and eligibility widened, their benefits reached 22% of total transfers in 1989 (up from only 4% in 1971).

Cash transfers from government help reduce the incidence of low income, more so among unattached individuals and female-headed lone-parent families than among husband-wife families. In 1989 these payments constituted two-thirds of total income of low-income unattached individuals and lone-parent families headed by women. □

Notes

¹ See Table 1.7, Statistics Canada, *Canadian economic observer: historical statistical supplement, 1988/89* (1989).

² Data on incomes and transfer payments were converted to 1989 dollars using the Consumer Price Index.

³ Unattached individuals may constitute single-person households or multiple-person households as long as they are unrelated to one another.

⁴ See Statistics Canada, *Income distributions by size in Canada, 1971 (1973) and Income distributions by size in Canada, 1989 (1990)*.

⁵ It is beyond the scope of this paper to summarize all of the changes in benefits pertaining to programs that existed in 1971. However, to illustrate the point, certain changes have been made to the initial Canada and Quebec Pension Plans: (1) pensions were previously payable beginning at age 65 whereas since the 1980s, contributors have the option of receiving retirement

benefits as early as age 60 with a reduction in benefits of 0.5% in monthly benefits prior to age 65; (2) equal division of total pension credits earned by spouses during their married life on the dissolution or legal annulment of their marriage; and (3) persons receiving survivors' benefits from these plans could remain eligible for such benefits even after they remarried.

In the case of Unemployment Insurance (UI), the initial 8-week minimum has been replaced by a variable entrance requirement depending on the regional rate of unemployment in conjunction with the number of weeks of insurable employment. As well, a parent can claim UI benefits for legally adopting a child. Effective January 1984, either parent can draw up to 15 weeks of benefits providing his or her presence is required in the home and both have at least 20 weeks of insurable employment during the past year.

⁶ For instance, only 4% of all tax-filers paid contributions to Registered Retirement Savings Plans in 1971 compared with 20% in 1987; see H. Frenken, *Perspectives on labour and income* (Winter 1990).

Notes – Concluded

⁷ For example, individuals with incomes up to \$50,000 would keep full benefits whereas those with incomes of \$75,000 and over would pay back in full benefits from these programs. Persons with incomes between \$50,000 and \$74,999 would keep only part of such benefits.

⁸ See the National Council of Welfare's most recent report *Women and poverty revisited: a report* (1990).

⁹ It is beyond the scope of this paper to mention changes over the 1971 to 1989 period in amounts of benefits pertaining to all social security programs. To illustrate, however, average Unemployment Insurance (UI) benefits rose from \$141 in 1971 to \$216 in 1989. The UI benefit rate was 66.6% of a claimant's weekly insurable earnings in the 1970s compared with 60% in 1989. Since UI benefits became taxable, recipients with incomes over \$47,190 in 1989 had to pay back 30% of UI benefits.

¹⁰ For instance, see S. Danziger, R. Haveman and R. Plotnick, *Journal of economic literature* (1981); J. Curtis et al., *Social inequality in Canada: patterns, problems, policies* (1988); K.G. Banting, *The Canadian review of sociology and anthropology* (1987); L. Osberg, *Perspective 2000: proceedings of a conference sponsored by the Economic Council of Canada* (1988); G.L. Reuber, *Canadian public policy* (1978); and A. Rashid, *Perspectives on labour and income* (Autumn 1990).

Besides excluding reference to the effect of government transfers on the distribution of income, this analysis has not dwelt on the effects of such transfers on a family's savings and consumption behaviour or on its labour force participation.

¹¹ Canada has no "official" poverty lines. Statistics Canada's low income cut-offs are a statistical tool widely used to identify the low-income population. For details about this concept, see Statistics Canada, *Income distributions by size in Canada 1989* (1990).

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Who's looking after the kids?

Child care arrangements of working mothers

Susan Crompton

Most tasks associated with child care have traditionally fallen on the shoulders of women. But women now comprise close to half the workers in Canada and many of them are mothers of children under 13. Too young to look after themselves while their parents are at work, these children add to the countless other parental responsibilities, the task of organizing adult supervision for them during their parents' absence.

Having their children well taken care of while they work is essential to women's continuing or increasing participation in the labour force. The child care debate today centres on the search for the most effective and satisfactory method of balancing work and child care responsibilities. This article examines data from the National Child Care Survey (NCCS) on the two most common non-parental child care arrangements women use while they are working: sitters and day care centres.

By restricting the analysis almost exclusively to mothers, this report does not intend to ignore the contribution men make to child-rearing; however, working men are chiefly responsible for child care in only 6% of families. Data on these men are examined briefly under a separate heading at the end of this article (see **Fathers**).

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Situations of working mothers

In late 1988, there were over 2.7 million families in Canada with at least one child under the age of 13. Slightly more than 86% of these families had two parents in the home; the remainder were one-parent households, 9 in 10 of which were headed by the mother. The majority of all of these families had only one child (46%) or two children (40%) under the age of 13, for a total of almost 4.7 million children. Almost 47% of them were no more than 5 years old, and 38% were between 6 and 10 years old.

With women's mass entry into the labour force in the 1970s and 1980s, it is no surprise that in 56% of these 2.7 million families, the mother worked outside the home. Not only were the majority of mothers of young children working, most of them were employed full time. About 70% of working mothers had full-time jobs (30 or more hours a week) while the remainder held part-time positions (less than 30 hours a week).¹

Although so many women with pre-teen children were employed, their annual income in 1987 was not very high. About one-third had an income of no more than \$10,000; a further 31% reported an income between \$10,001 and \$20,000. Only 13% stated they had an income of more than \$30,000 a year (Table 1).

Data source and limitations: The National Child Care Survey

The National Child Care Survey (NCCS) is the most comprehensive survey on child care arrangements ever carried out in Canada. Conducted in September and October 1988, the NCCS was administered as a supplement to the monthly Labour Force Survey in all households with at least one child under the age of 13. In conjunction with Statistics Canada, the survey was designed and developed by the National Daycare Research Network, a consortium of researchers from four universities sponsored by Health and Welfare Canada. The objective was to provide information on the need for child care, patterns of use, expenses, parents' preferred choice of care, and the relationships between family structure, child care choices and work demands. This article draws on a very small fraction of the data available from the NCCS. A series of publications making full use of the NCCS data is planned for release by the Research Network over the next few years (see "Sources" in *Perspectives*, Spring 1991, for more information). For a full description of the survey, contact Sue Lafrance, Statistics Canada, at (613) 951-0524, or Dr. Donna Lero, University of Guelph, at (519) 824-4120.

The large majority of working mothers were partners in two-parent families in which the husband worked full time. The impact of the husband's earnings on the family is profound and can be seen in the joint annual income figures of the parents (Table 1 data include lone-parent families). In almost 4 in 10 families where the mother worked, the parental income ranged between \$30,001 and \$50,000 in 1987; and 35% of families had parental incomes over \$50,000. Nevertheless, 14% of families in which the mother worked outside the home reported an annual income of \$20,000 or less.

For the remainder of this article, "income" refers to "parental" income, that is, the joint income of both the working mother and her partner, or the income of the mother only in the case of lone-parent families.

Child care options

The NCCS collected data on eight types of non-parental child care; for purposes of this

article, they have been collapsed into four basic categories (Table 2). Since more than one type of arrangement is made for some children, the data include double-counting. For example, a child may spend 30 hours a week with a sitter and another 15 hours in a kindergarten or nursery school program; in this case, the child appears in the totals for both types of care. This double-counting is not problematical, however, since the purpose here is to portray the use of different types of care.

This article focuses on two of these options: care by a sitter, whether a relative or non-relative, and care in a day care centre. The reason for examining sitter care is that this option is used for far more children than any other type of non-parental care arrangement during the mother's absence at work. Day care centres were chosen for study because even though they have a smaller enrolment than kindergarten/nursery school programs, 70% of children are there while their mothers are working, compared with 33% of children in

Table 1
Distribution of working mothers and their families in 1988, by annual income in 1987

	Mothers*		Families**	
	'000	%	'000	%
Total	1,532	100	1,532	100
\$1 - \$10,000	531	35	77	5
\$10,001 - \$20,000	472	31	135	9
\$20,001 - \$30,000	323	21	217	14
\$30,001 - \$50,000	169	11	566	37
\$50,001 - \$70,000	16	1	356	23
\$70,001 and over	9	-	179	12

Source: National Child Care Survey

* Mothers are distributed according to their annual income; figures do not add due to some mothers working in 1988 but having no income in 1987.

** Families are distributed according to the joint income of mothers and their spouses. These data include working mothers in lone-parent families.

Glossary

Designated adult (DA) – the adult, male or female, chiefly responsible for making the care arrangements of children in the family, as self-identified in the National Child Care Survey. In cases where both parents shared child care tasks equally, the mother was chosen to be the DA. This aspect of the survey design means that men's involvement in child care is not fully represented.

Mother – a female DA who is the natural, step or foster mother of the children in her care. Since 99% of women DAs fit this definition of "mother", the word "mother" is synonymous with "female DA" in this article.

Father – a male DA who is the natural, step or foster father of the children in his care. Because 99% of male DAs meet this definition of "father", "father" is used as a synonym for "male DA".

Parent – the mother or father of the child, generally taken to mean the DA in this article.

Spouse – the legal or common-law partner of the DA. In most two-parent families, the spouse is the husband.

Family – two or more persons living in the same dwelling who are related by blood, marriage or adoption. In this article, at least one member of the family is a child under the age of 13.

Relative – any person related to the child by blood, marriage or adoption except a sibling or a parent living in the same household.

Sitter – a relative, neighbour, friend or other adult entrusted with care of the child during the DA's absence. This includes nannies and trained family day care providers operating licensed home day care facilities.

Child care arrangement – the type of care chosen for the supervision of the child during the DA's absence at work. Data are for the arrangements used during the reference week, unless otherwise indicated in a note.

Parental expenditures – the dollars the DA reported paying directly out of her or his pocket for child care during the reference week. The amounts reported exclude any subsidies. Furthermore, the amounts are based on the parents' best estimate of payments made and not on receipts provided by the care giver.

Working mother, father or parent – a female or male DA who had a job during the reference week, either full-time or part-time. He or she was not necessarily employed throughout the preceding 12 months.

Annual income – income from all sources in 1987. This includes gross wages and salaries, net income from self-employment, government transfer payments (Family Allowance, UI benefits, social assistance, etc.), investment income and other income.

kindergarten/nursery school. Furthermore, since kindergarten/nursery school is generally offered part day only, and the majority of mothers work full time, full-day access to care is an important requirement for women.

Care by a sitter²

In 1988, approximately 814,000 women left at least one of their children in the care of a sitter while they were working. This accounted for an estimated 1,042,000 children under the age of 13, 58% of whom were less than 6 years old. Almost 12% of the children, some 120,000, came from lone-parent families.

Hours in care

Children spent an average of 20 hours per week in sitter care. As many generalizations do, however, this one masks a more complicated pattern of use. One-fifth of these children spent, at most, 5 hours a week with the sitter; another fifth spent between 6 and 10 hours. Such few hours may suggest that they were receiving 1 or 2 hours of care before and/or after the school day (especially in the case of children over 5, who comprised the large majority of those in sitter care for 10 hours or less). Nevertheless, 59% of

Table 2
Distribution of children in non-parental child care arrangements, 1988

Arrangement	Total number of children in care	Children in care while mother is working
	'000	'000
Care by sitter	1,814	1,042
Kindergarten/ Nursery school	578	189
Day care centre	202	141
Before-/after-school program	83	64

Source: National Child Care Survey

Table 3
Profile of children under 13 in 1988, by parental income in 1987

	Total	\$1- 20,000	\$20,001- 30,000	\$30,001- 40,000	\$40,001- 50,000	\$50,001- 60,000	\$60,001- 70,000	\$70,001- 80,000	\$80,001 and over
	'000								
Number of families	2,724	560	426	544	455	314	181	93	141
Number of children	4,658	909	742	953	809	534	300	157	240
Age of children									
0-5	2,165	435	351	460	367	242	132	64	106
6-10	1,787	341	283	356	317	211	117	67	93
11-12	707	133	108	137	125	81	52	27	41
Total children in sitter care	1,814	314	263	348	321	237	139	74	114
With mother working	1,042	127	140	194	199	165	92	50	75
0-5	603	71	76	122	116	98	50	28	41
6-10	371	47	53	62	69	58	36	19	27
11-12	69	9	12	10	14	9	6	--	7
Total children in day care	202	44	30	29	29	25	18	9	16
With mother working	141	23	19	18	23	21	14	8	15
0-5	126	20	17	16	21	18	14	7	13
6-10	15	--	--	--	--	--	--	--	--
11-12	--	--	--	--	--	--	--	--	--

Source: National Child Care Survey

children were left with a sitter for more than 10 hours a week; of these 613,000 children, over one-fifth spent more than 40 hours with one.

Although 41% of all children in a sitter's care were there for no more than 10 hours a week, those from families in the higher income groups spent longer hours with the sitter: 17% of children with parents in the \$70,001-and-over category spent more than 40 hours a week in a sitter's care, significantly more than the 13% average.

Parental expenditures on care

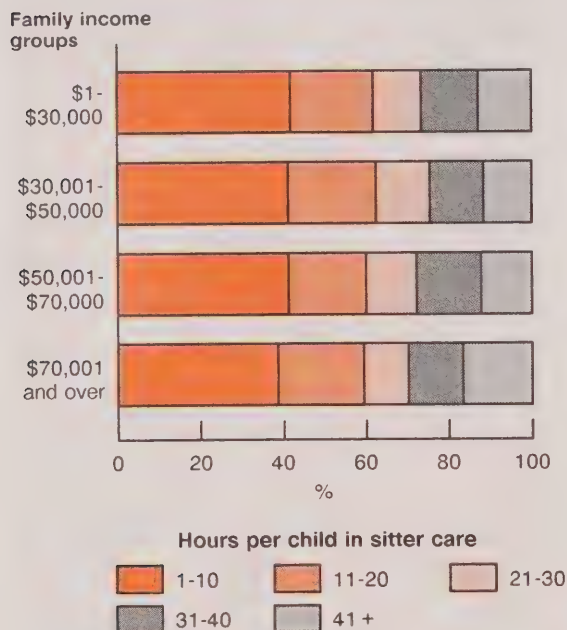
Finding child care that is not an undue strain on the family finances is a significant concern for many working mothers. Sitter care appears to be an affordable option. For almost one-third of all children, sitters cost nothing; for over one-third, sitters cost between \$1 and \$25 per week and for more than one-fifth they cost \$26 to \$50. In other

words, the mothers of over 85% of children in a sitter's care were paying no more than \$50 a week per child. The average out-of-pocket expenditure was \$1.27 per hour per child for those children whose mothers paid for the service.³ (The dependence on relatives to provide child care, which doubtless defrays some of the costs of sitter care, is outlined in the following section.)

Not surprisingly, families in the lower income groups were much more likely to pay nothing for a sitter; close to half the children in the \$1 to \$20,000 family income group and 39% of those in the \$20,001 to \$30,000 range were cared for free of charge, but almost one-quarter of those from families with incomes exceeding \$50,000 were also looked after gratis. Less than 5% of all children cost their parents over \$75 for their weekly care, although higher income families were more likely than other families to pay rates at the high end of the scale.

Hours per week in sitter care while mother working, 1988

Regardless of the income group, about 40% of children spent 10 hours or less a week in sitter care.



Source: National Child Care Survey

Relatives as sitters

The high volume of free babysitting observed may not be surprising when the sitter's family ties to the child are considered. Almost 40% of children in sitter care were cared for by a relative while their mother was away at work; in the majority of these cases, this person was a grandparent. Grandparents were relied upon more frequently by low- to middle-income families – close to one-quarter of all children from families with incomes of \$50,000 or less were regularly looked after by their grandparents. The proportion was lower in the higher income groups but stayed in the 14% to 20% range. Aunts and uncles were the next "relative of

Weekly expenditures on sitter care while mother working, 1988

Even in the highest income group, over 20% of the children received free care.



Source: National Child Care Survey

choice" for working mothers using other family members to supervise their children, accounting for about 8% of all children in a sitter's care.

Care in a day care centre

The perception that formal day care is used principally by the well-to-do and subsidized low-income mothers is something of an exaggeration. About 128,000 working mothers sent at least one of their children to a day care centre, and 57% of them had parental incomes between \$20,001 and \$60,000. The assumption that only very young children are placed in day care is,

however, correct; 89% of the 141,000 children in day care while their mothers were working were no more than 5 years old. Almost one in five, or 18%, of day care children came from lone-parent families.

Hours in day care

Working women with children in a day care centre generally made far greater use of these facilities than did women using sitter care. Children spent an average 31.4 hours a week in day care. Children from higher income families were slightly more likely to spend long hours (over 30 per week) at a centre than were those from families with incomes up to \$50,000 (Table 4). A significant aberration in this general pattern is found among children from families in the \$20,001 to \$30,000 range, almost 36% of whom spent over 40 hours a week at day care.

Parental expenditures on day care

Given that a large proportion of children spent many hours in day care, it seems surprising that the weekly expenses reported by mothers contradicts so much of the anecdotal evidence. With payments averaging \$1.59 per hour per child for the parents being charged, the working mothers' out-of-pocket expenditures on day care were competitive with paid sitter care. Only 6% of children in day care cost their families more than \$100 a week (and in most of these cases no more than \$125); almost the same proportion cost their families nothing at all, most probably because their places were subsidized. Of the remaining 89% of children, day care payments for half were between \$1 and \$50 a week, and from \$51 to \$100 for the other half.

Day care expenditures for children from families in the lower income groups were generally smaller. A high proportion (63%) of children whose families had

Table 4

Distribution of children of working mothers, by weekly hours in day care, child care expenditures and parental income

		Total	\$1- 50,000	\$50,001 and over
Number of children	('000)	141	82	58
Weekly hours in day care	(%)	100	100	100
1-10		14	15	12
11-20		14	14	15
21-30		15	17	12
31-40		28	26	32
41+		29	28	30
Weekly expenditures per child	(%)	100	100	100
\$0		5	8	--
\$1-\$50		45	55	32
\$51-\$100		44	34	57
\$101+		6	--	10

Source: National Child Care Survey

incomes of \$50,000 or less had been placed in centres whose direct cost was no more than \$50 a week. In fact, 12% of children from families reporting \$30,000 or less received free day care, and 45% were paying \$1 to \$25 a week.

One of the reasons why parents' direct outlays on day care may be lower than expected is subsidization; one in five children is subsidized by the government to some extent. Subsidization is restricted almost exclusively to lower income families; 31% of children from families in the \$1 to \$50,000 income range received subsidies in 1988, with almost half (49%) of those from families with \$30,000 or less having some degree of financial assistance. (A number of DAs did not know or did not say if they received subsidies, which makes it likely that these estimates are low.)

Type of day care

The direct cost of day care to the working mother may also be linked to the nature of the organizer or sponsor of the centre. Almost 67,000 of the children in day care (47%) were in privately run centres; but more than 34,000 (24%) used facilities run by community or day care agencies. Over 13% of children were in programs sponsored by municipal governments, and another 11% were in school- or church-run facilities.

As might be expected, lower income families made less use of privately run facilities. About 45% of children from families with incomes of \$50,000 or less had places in a private centre, compared with 51% of those from the over-\$50,000 income group. On the other hand, children from lower income families comprised almost all the "patrons" of centres run by municipal governments and made more use of facilities operated by a community or day care agency (Table 5). This pattern is even more noticeable among children from families with an income of \$30,000 or less: one-third

of them attended centres sponsored by community or day care agencies, and another one-fifth were in municipal facilities, rates of use far above the average for these two types of centres.

Satisfaction with care arrangements

Sitter care and day care centres were used for about 80% of children for whom non-parental child care arrangements were made. And for the most part, mothers were happy with the care their children were receiving. Mothers of 70% of children in day care and of 77% of those with a sitter had "no reservations" about their children's well-being while they were away at work.

This general satisfaction with the quality of care is common to working mothers using all types of arrangements.⁴ Almost 85% of all children were in care that their mothers considered somewhat or very satisfactory.

One of the major difficulties working mothers face is changing care arrangements because their children have outgrown a program, or they are not happy with the present sitter, or want to follow their favourite day care "teachers" if they change jobs, and so on. The upheaval caused by such moves can be considerable, and it happens with a fair degree of frequency. Of all children needing care while their mothers were working, the majority stayed with one main care arrangement throughout the year. However, over three-quarters of a million children – 770,000 – were dislocated at least once during the year when new care arrangements were made.

The most common reason for terminating an arrangement was the availability or unavailability of a program or care giver; this happened to 34% of children whose main type of care was cancelled. The beginning or ending of school holidays signalled the end of

Table 5
Proportion of children in day care while mother is working, by operator/sponsor of day care centre and parental income

		Total	\$1- 50,000	\$50,001 and over
Number of children	('000)	141	82	58
Private	(%)	47	45	51
Community/ day care agency		24	26	22
Municipal government		13	17	--
School/Church		11	9	13
Other/Not stated		--	--	--
Total	(%)	100	100	100

Source: National Child Care Survey

care for almost 19% of children. Less than 9% of children whose main care arrangement was terminated had to change care givers because their mother was dissatisfied with the care her child was receiving.

Fathers

Although working women with young children took the lion's share of child care responsibilities, some working men also accepted the job. In 1988, just over 102,000 men were chiefly responsible for child care arrangements in their families (that is, the designated adult). They accounted for slightly more than 6% of the total number of working adults charged with such a trust.

Fully 97% of working fathers were employed full time. On average, their individual incomes were higher than those of women, with over half having total incomes between \$20,001 and \$50,000 a year (41% for women working full time). Nevertheless, a substantial proportion of working fathers, 38%, reported incomes of \$20,000 or less in 1987.

Working fathers also heavily favoured sitter care over day care: they placed over 61,000 children in the care of a sitter, compared with just under 8,000 in day care. For these men, general use of sitter care does not differ significantly from use by working women; the number of hours, the weekly expenditures per child and the cost of care per hour are comparable. An interesting divergence from the "norm" is that over one-quarter of these children were from lone-parent families, compared with less than 12% of those with working mothers.

The use of day care centres by children of working fathers does differ in some particulars. For example, the children were far less likely to be from lone-parent families; they also spent slightly fewer hours per week in day care. The weekly expenditure per child was generally higher, however, probably because fathers were more likely to use privately run centres; the care for 67% of children of working fathers cost \$51 to \$100 per week, compared with 44% of children with working mothers.

Conclusion

Sitters and day care centres were the two most common types of non-parental child care chosen by working mothers in 1988. That year, over 1 million children under the age of 13 were supervised by a sitter and about 140,000 were placed in day care. About 60% of children in sitter care were less than 6 years old, compared with 89% of those in day care.

Generally speaking, children in sitter care were there fewer hours per week than those in day care. About 40% of children with a sitter were being cared for by a relative or family member. Just over 47% of children in day care were in privately run centres.

Men were chiefly responsible for child care in 6% of families. On the whole, patterns of use by working fathers did not differ from those of working mothers.

Both mothers and fathers were generally satisfied with the care their children were receiving, but the question remains: were they content with the status quo because it offered what they wanted, or because they had no practical alternative to it? □

Notes

¹ The greatest area of employment growth for women over the period from 1980 to 1990 has been in full-time work, which increased by 54%. In 1990, full-time employment accounted for 79% of all employed women over the age of 24. A slightly smaller proportion of women with pre-school age children, just over two-thirds, worked full time.

² The National Child Care Survey (NCCS) allowed designated adults (DAs) to report up to four different sitters for each child, if they had used more than one sitter care arrangement during the reference week. But because fewer than 13% of children had more than one sitter during the reference week and they spent so few hours in that subsidiary care, this overview report focuses on the "first care giver", that is, the sitter with whom the child spent the most number of hours.

³ Sitters include nannies, many of whom would live in the same house as the child, and receive room and board as well as wages for their services.

⁴ Due to the configuration of the survey file, the data on satisfaction and terminations relate to all main care arrangements of working mothers – sitter care, day care, and other types of arrangements, including care by an immediate family member such as an older sibling or spouse while the mother is working. The satisfaction rating is based on a roll-up of responses to a series of questions asking about the designated adult's level of satisfaction with such items as the care giver's sensitivity to the child's needs, play space, learning activities and staff turnover.

Sources

A potpourri of information: survey news, including special surveys conducted as supplements to the Labour Force Survey; notes on research projects inside and outside Statistics Canada; recent publications and data releases; other items of news and future events.

Year-long survey of physical and mental health of Ontario residents completed

Statistics Canada recently finished collecting information on the physical and mental health of Ontario residents. Sponsored by the Ontario Ministry of Health and the Mental Health Foundation, the objective of the project is to develop "a better understanding of the social, medical and psychological factors that contribute to health". In support of this goal, the survey examined: the health status of Ontario residents; the effect of socio-economic, demographic and geographic factors on health; people's awareness of the impact of lifestyle on their health; and the use of health services. Provincial officials will use the data to target, plan and develop health programs.

The Ontario Health Survey was a multi-part, multi-stage survey. It consisted of two separate parts administered to different people at different times. The data were collected over 15 months in order to accurately characterize health patterns, since some illnesses and behaviours may be

more common during one season than another; for example, flus and colds are more frequent in winter, and higher levels of physical activity and sporting accidents occur in summer. As well, the province had to be divided into 43 public health units (PHUs) containing both urban and rural components to develop a profile of health habits and activities representative of residents from all walks of life.

The main survey on physical health was conducted in two stages. The first portion consisted of an interview covering all members of the selected households; the second portion comprised a detailed self-enumerated questionnaire that household members 12 years and older were asked to complete. Data were collected on such topics as: current health; ease of physical mobility, eyesight and hearing; nutrition; smoking, drinking and driving; health problems related to work; visits to doctors and dentists; and state of mind. A response rate of 87% on a sample of over 32,000 households was achieved for the interview portion of the survey; 76% was obtained for the self-enumerated portion, and represents over 48,000 individual respondents.

The survey supplement on mental health was held several months following the main survey. The sample was drawn from half those households that had responded earlier, but only one household member was selected to participate. Youths aged 15 to 24 were overrepresented in the sample to provide extra information about a population group that is particularly

vulnerable to some varieties of mental stress and illness. The supplement covered many highly sensitive areas; for example, present relationships with family and friends, abnormal fears and anxieties, depression, strange experiences, and socially irresponsible or criminal behaviour. Despite concerns that people would refuse to answer some of the questions, response rates were good.

Data from the supplement can be cross-linked with the results of the main survey on physical health. This will allow analysts to examine, for example, the eating habits of people who say they are chronically depressed.

Public use microdata files for the main survey are not expected to be available until December 1991; files for the mental health supplement, which was in the field until late March, may be ready for release by March 1992. Analytical reports will be published as they are completed.

For more information about the Ontario Health Survey, contact Anne Haining, Statistics Canada, at (613) 951-4592, or the Manager, Ontario Health Survey, at (416) 965-0908. □

Employment and Immigration assesses the job market for young people

The 1990 Edition of *Job Futures* from Employment and Immigration Canada (EIC) is now available in many bookstores. Released at the end of last year, the two-volume book is designed to help people assess their job prospects in the "real world". Although meant mainly for young people planning or completing their postsecondary studies, it is equally suitable for those wanting to upgrade their job skills or change careers altogether.

Volume 1, *Occupational Outlooks*, presents statistical information on about 200 different types of jobs, as categorized by the Standard Occupational Classification. It begins with government inspectors and regulatory officers (SOC 1116) and concludes with photographic processing occupations (9591). In between are all the other occupations classified at the four-digit level, from police officers and dental laboratory technologists to ministers of religion and machinists. The purpose is to outline main functions and responsibilities of the job, working conditions, educational requirements, average income levels, career opportunities, and employer demand.

For example, occupation 4192 – claims adjuster – describes the basic duties of the job, adding that evening and weekend work is frequent. The minimum educational requirement is high school graduation; on-the-job training is usually offered, with new employees beginning in clerical-type work and moving up through the ranks. Average income was over \$22,500 in 1985 (1986 Census) and 70% of adjusters are women. Principal employers are the finance, insurance, real estate and trade industries, as well as public administration. Medium-term prospects are good, with almost 4,600 new jobs projected to open by 1995. Employment does not seem to be affected by the business cycle, and unemployment rates are below average.

Volume 2, *Experience of Recent Graduates*, tackles the issue from the perspective of students unsure of the kinds of jobs open to them. This volume strives to answer questions on: fields of study commonly found in an occupation; success of recent graduates from a given field in finding jobs; career value of doing postgraduate work; incomes of recent graduates in the field of study. For example, most employed architecture graduates had undergraduate degrees. Jobs existed mainly

in the business services and trade contracting industries, and because they were specialized, there were fewer applicants for each opening. Earnings were slightly below average in the short-term, but over the medium-term they rose above the average. Ninety-five percent of architecture graduates were satisfied with their jobs.

With the intended audience in mind, each profile is restricted to two well laid-out pages, with brief tables, clearly written prose and suggestions about who to contact for more information. Labour market projections are for the years 1989 to 1995. Most of the data in Volume 2 are drawn from two surveys (conducted in 1987 and 1988) of the labour market experience of postsecondary graduates two years and five years into their careers.

Job Futures, 1990 Edition, Volumes 1 and 2, (Catalogue No. MP43-181-E) is available for \$19.95 from most government bookstores, or by writing to Canada Communications Group, Publishing, Ottawa, K1A 0S9. Order by fax at (819) 994-1498. □

GSS Cycle 5 reveals the "new family"

The latest results from the General Social Survey (GSS) offer new insights into domestic life in Canada. Conducted from January to March 1990, GSS Cycle 5 collected data on changing patterns in Canadians' relationships and interactions with family and friends. Among the topics covered were: frequency of contact with friends and family members living outside the home; plans to have children; history of marriages and common-law unions; division of chores among household members; and social support networks.

The GSS sample base is usually 10,000, but it was enlarged to 13,500 to include more seniors. Except for the elderly, respondents were chosen using the Random Digit Dialling technique and an overall response rate of close to 75% was achieved.

Among the findings most likely to interest *Perspectives* readers are:

- 89% of employed adult Canadians aged 15 to 64 were satisfied with their job.
- 82% of employed adults were satisfied with the balance between their job and their family or home life. However, couples with children and lone parents were not as content with the balance they attained as were single adults and couples without children.
- About three-quarters of adults without children (singles and couples) were satisfied with the amount of time they had to pursue other interests; the rate was lower among couples with children (63%) and lone parents (58%) who might be expected to have more family responsibilities.
- 31% of adult Canadians had done some volunteer work in the 12 months preceding the survey; couples with children were the most active, with 39% of them being volunteers; about one-third of volunteers were active at least once a week.

Results are available in the customary array of GSS outputs: a public use microdata tape or diskette is now available; a preliminary report, containing descriptive text and tables with univariate data, has also been released; and special analytic reports will also be published as they become available.

For further information about GSS Cycle 5, contact Josephine Stanic at (613) 951-8644. For general information about the GSS program, contact Doug Norris at (613) 951-2572. □

Where to find government data on Canadian municipalities

For every analyst who has ever spent as much time tracking down data as doing the research itself, help is at hand. It's the *Small Area Data Guide*, a reference book designed to tell you what government information exists for sub-provincial areas and where to find it.

The purpose of the guide is two-fold: to identify the types of statistical data available for small areas, such as towns, rural communities and urban neighbourhoods; and to identify the federal, provincial or territorial government department where the data can be obtained. And because the content and format were dictated largely by participants in an extensive consultation process, the guide offers wide-ranging coverage and easy accessibility to both experienced and neophyte researchers.

The basic organizational unit is the municipality, which includes all incorporated cities, towns and villages, as well as improvement districts, Indian reserves and unorganized territories. The system is designed to allow users to break the municipality down into smaller segments or to build it up into larger ones. Thus, each chapter is subdivided into geographic areas that become successively larger, and moves from the local neighbourhood (postal code area) to the urban sprawl (census metropolitan area). The 27 general subject matter areas – from agriculture to vital statistics – are broken down into over 200 subcategories. These variables are listed at the level of geographic detail for which they are

available. For example, data on family incomes are available at all levels from postal code area to census metropolitan area.

The guide's accompanying "Notes" describe special circumstances applicable to the data, such as specific exclusions from coverage and selected variables. This should ensure that users know beforehand which of their questions the data will and will not answer.

Testimony to the extensive coverage in the guide is apparent when reviewing just a fraction of the many government departments that have contributed to its creation: Revenue Canada, Health and Welfare Canada, the Forestry Service, Ontario Ministry of Natural Resources, British Columbia Ministry of Finance and Corporate Relations, Saskatchewan Agriculture and Food, Environment Canada, Quebec Department of Education, and many others. Of course, much material comes from Statistics Canada, especially the census.

A clearly written introduction explains how to use the guide, presents a complete major topic and subject index, defines terminology, and provides a step-by-step example showing how to identify and contact the data source. It should prove valuable for regional and municipal planners, labour market analysts, librarians, local chambers of commerce and industry associations.

Difficulties in standardizing definitions prevented the inclusion of data collected by local governments. However, information provided by 1,645 cities, towns and regional authorities (representing 13 million people) is presented in an appendix covering 15 major subject areas, including business, transportation, social services and the labour market. Two separate appendices list Full Depository Libraries in Canada – libraries that receive all documents published by federal government departments – and all Statistics Canada Reference Centres.

The *Small Area Data Guide*, published by the Intergovernmental Committee on Urban and Regional Research (ICURR), is available for \$24.95 per copy, plus \$3.25 postage and handling. Order from ICURR Press, Suite 301, 150 Eglinton Avenue East, Toronto, M4P 1E8. Telephone (416) 973-8754; fax (416) 973-1375. □

Should you be using microdata tapes?

One of the ways Statistics Canada releases its survey data is through "public use microdata files". *Perspectives* readers may be familiar with the phrase, but may not be altogether clear about its meaning, and whether they should consider using data in this format.

The published data that most people are familiar with – statistical tables and analytical highlights – are the aggregation of responses to survey questions, mathematically transformed into weighted estimates representative of the population or a subgroup of the population. For example, the 140,000 individuals in the Labour Force Survey (LFS) sample are selected and weighted as proxies for all Canadians 15 years of age and over. Their replies to questions about their labour market activities are therefore assumed to be the same as those that would be given by all households if they had answered the survey. It is these aggregated figures that are released to the general public through the media, special reports, and so on.

As the word "microdata" implies, these are data files for serious "number-crunchers". The microdata file for a survey contains the individual record for each respondent; that is, the actual replies to the questions on the survey. In the LFS sample cited above, there would be 140,000 such records. In essence, having the microdata

file is the electronic equivalent of having the stack of completed questionnaires on your desk. It tells you the number of people answering, say, "Yes, I was employed during the reference week", just as the published data do. But the real virtue of the electronic stack of questionnaires is its flexibility. It is easy to determine multiple characteristics based on selected responses to a sequence of questions, thereby winnowing out respondents who do not share the salient characteristics – "Yes, I was employed as a mining engineer, worked more than 40 hours a week and was enrolled as a part-time community college student." In other words, a microdata file can help you answer specific questions by targeting the data retrieval.

In addition to the answers to specific items on the questionnaire, the files also contain what are known as derived variables. These may be groupings of specific values, for example, age intervals, or they may be combinations of responses to several questions. For example, in the Labour Market Activity Survey (LMAS), respondents are asked for the start dates and end dates of all the jobs they held in the reference year. Rather than oblige the users of the LMAS to use dates which are, by their very nature, computationally awkward, the dates have been converted into derived variables representing weeks of employment during the year.

The microdata file provides an analyst with the highest level of detail possible. However, Statistics Canada is scrupulous about ensuring that it does not do so at the cost of the respondent's anonymity. The confidentiality of an individual's replies is protected in a number of ways: names, addresses and detailed geographical locations are excluded; characteristics are amalgamated or collapsed; extremes in variables such as income or age are suppressed; and so on. In addition, most files carry records for individuals only, that

is, there is no linkage back into the household or family to which that individual belongs. Nevertheless, if a high level Statistics Canada committee believes the risk is too great that someone using the files could possibly identify an individual, the microdata files are not released to the public. (In this instance, users can ask for custom tabulations instead. More on these later.)

All microdata files are accompanied by extensive documentation outlining the survey's objectives and design so users know what the data will and will not reveal. Purchasers are also provided with hard copy record layouts (showing how the file is organized) and with univariate counts (a tally of all responses to each question).

The basic advantages of a microdata file, then, are its level of detail and the purchaser's complete control over where, when and how to manipulate the data. The files cost from \$500 to \$1,000 for most surveys. Files are offered on magnetic tape, requiring a nine-track tape drive; they are also available on PC-compatible diskette. In some cases, the sheer volume of survey data makes it impractical to use a diskette, and the file is available only on magnetic tape. Software is not built into the files, but packages for data manipulation (like SAS) can be added upon request.

Clearly, microdata tapes are very detailed, technically demanding and not for everybody. But many people want more data, or different data, than those available in a published report. (If the survey was sponsored by a single client, a publication may not be forthcoming.) A better option may be a custom tabulation, whereby clients specify what they want from the data file; Statistics Canada then extracts, links and cross-matches the relevant variables on the client's behalf. At about \$250 per table, the price of a custom tabulation may seem high – although a table can be many pages long – but for users with limited technical capability or very specialized interests, buying

the expertise along with the data may be less costly than attempting the job themselves.

Any announcement that survey data have been released for public use will state whether microdata files are available. In addition, the 1990 *Statistics Canada Catalogue* (Catalogue No. 11-204E) contains a listing of public use microdata files available. □

Saskatchewan consultant depicts life in Canada over next 20 years

As everyone knows, the only certainties in life are death and taxes. To this short list, Saskatoon economist Roger Sauvé adds that the Canadian population will continue to age as life expectancy increases and fertility rates drop. The age composition of the population affects all aspects of society and presents a multitude of challenges to the private and public sectors. This is the basic theme of his book *Canadian People Patterns: What's in the cards for you?*

This is a layman's overview of current demographic and socio-economic conditions and their expected impact on Canadian society in the twenty-first century. It adopts a jazzy style and tone, and brief, concentrated bursts of information is its preferred method of communication. Almost 60 "People Patterns" – two-page self-contained summaries – outline a trend and its probable evolution over the next 20 years. The "Patterns" are organized into 13 short chapters addressing basic subject matter areas such as the labour force, education, income, prices, and consumer spending.

Each of the "Patterns" sets out the basic facts, first describing what has happened in the past decade or so and then what is likely to happen, given past events and the present behaviour of contributing factors. The trends are illustrated with

simple bar charts, line graphs and data tables. The most interesting part of each "Pattern" is the concluding paragraph which briefly explains the wide significance of the trend. For example, the growth of one-person households, spurred by an aging population, will affect the type of housing demanded by consumers. This change in lifestyle will reverberate through the construction industry, and demand imaginative solutions to problems of high-density population and public transportation from government.

The potential readership for Sauvé's book includes journalists, fact checkers, secondary school students and others interested in an accessible statistical projection of the possible future of Canadian society.

Canadian People Patterns: What's in the cards for you? by Roger Sauvé, is available through bookstores or directly from the publisher: Western Producer

Prairie Books, Box 2500, Saskatoon, Saskatchewan, S7K 2C4. Telephone: (306) 665-3548; fax (306) 653-1255. The cost is \$16.95. Available in English only. □

We welcome your views on articles and other items that have appeared in *Perspectives on Labour and Income*. Additional insights on the data are also welcome, but to be considered for publication, communications should be factual and analytical. We encourage readers to inform us about their current research projects, new publications, data sources and upcoming events relating to labour and income.

Statistics Canada reserves the right to select and edit items for publication. Correspondence, in either official language, should be addressed to: Susan Crompton, Forum and Sources Editor, *Perspectives on Labour and Income*, 5-A Jean Talon Building, Statistics Canada, Ottawa, K1A 0T6, or call (613) 951-0178.

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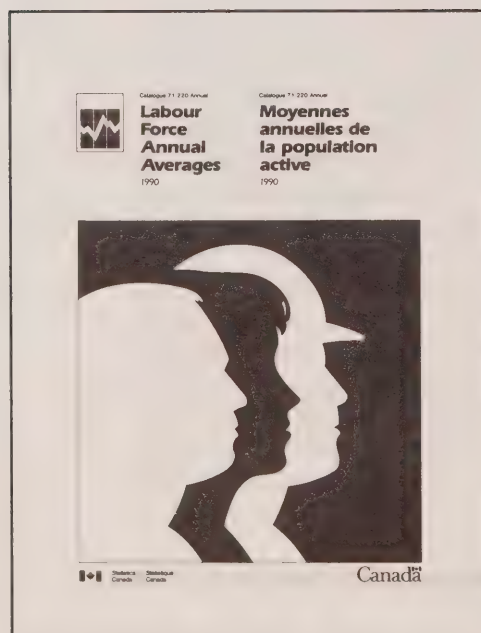
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Key labour and income facts

The following selection of labour and income indicators is drawn from 11 sources and includes published and unpublished annual data.

The latest available annual data are always shown; as results become available, the indicators are updated so that every issue contains new data. An indicator updated since the last issue is "flagged" with an asterisk.

Data sources

The indicators are derived from the following sources:

- 1-11 & 15 Labour Force Survey**
Frequency: Monthly
Contact: Doug Drew (613) 951-4720
- 12-14 Labour Market Activity Survey**
Frequency: Annual
Contact: Richard Veevers (613) 951-4617
- 16 Absence from Work Survey**
Frequency: Annual
Contact: Denis Lefebvre (613) 951-4600
- 17 Workers' Compensation Statistics**
Frequency: Annual
Contact: Joanne Proulx (613) 951-4040
- 18 Help-wanted Index**
Frequency: Monthly
Contact: André Picard (613) 951-4045
- 19-21 Unemployment Insurance Statistics**
Frequency: Monthly
Contact: André Picard (613) 951-4045

22-29 Survey of Employment, Payrolls and Hours
Frequency: Monthly
Contact: Howard Krebs (613) 951-4063

30-32 Labour Canada, Major Wage Settlements
Frequency: Quarterly
Contact: Sulaiman Khan (819) 953-4234

33-35 Labour Income (Revenue Canada-Taxation-based statistics, Survey of Employment, Payrolls and Hours and other surveys)
Frequency: Quarterly
Contact: Ed Bunko (613) 951-4048

36-46 Survey of Consumer Finances
Frequency: Annual
Contact: Kevin Bishop (613) 951-2211

47-53 Household Facilities and Equipment Survey
Frequency: Annual
Contact: Penny Barclay (613) 951-4634

Notes on the method of deriving certain indicators are given at the end of the table.

Additional data

The table provides at the most 2 years of data for each indicator. A longer time series (generally 10 years) for this set of indicators can be obtained on request, on paper or diskette, at a cost of \$50. (A more extensive explanation of the indicators is also available.) This 10-year data set is updated annually in April. Contact: Gilles Myre (613) 951-4627.

Key labour and income facts

No.	Unit	Year	Canada	Nfld.	P.E.I.	N.S.	N.B.
Labour market							
1 Labour force	'000	1989	13,503	238	63	414	325
		1990	13,681	242	65	424	331
Change	%		1.3	1.6	2.4	2.3	1.7
2 Participation rate	%	1989	67.0	55.7	65.0	61.2	59.5
		1990	67.0	56.0	66.0	62.1	59.8
3 Employed	'000	1989	12,486	201	54	373	284
		1990	12,572	201	55	379	291
Change	%		0.7	—	1.5	1.6	2.2
4 Proportion of employed working part time	%	1989	15.1	11.5	15.7	16.0	14.9
		1990	15.4	11.3	15.5	15.8	14.6
5 Proportion of part-timers wanting full-time work	%	1989	22.2	55.1	36.1	31.5	37.5
		1990	22.4	52.3	35.5	33.1	37.9
6 Unemployed	'000	1989	1,018	38	9	41	41
		1990	1,109	41	10	45	40
Change	%		9.0	10.1	7.9	8.8	-1.4
7 Official unemployment rate	%	1989	7.5	15.8	14.1	9.9	12.5
		1990	8.1	17.1	14.9	10.5	12.1
Alternative measures of unemployment							
8 Unemployed 14 or more weeks as a proportion of the labour force	%	1989	2.9	6.8	5.3	3.8	4.9
		1990	3.1	8.3	5.6	4.2	4.6
9 Unemployment rate:							
— of persons heading families with children under age 16	%	1989	6.8	15.6	14.2	9.2	11.8
		1990	7.3	16.5	15.3	9.3	11.2
— excluding full-time students	%	1989	7.4	15.8	14.6	9.8	12.4
		1990	8.0	17.2	15.4	10.5	12.0
— including full-time members of the Canadian Armed Forces	%	1989	7.5	15.7	13.9	9.6	12.3
		1990	8.1	17.0	14.7	10.2	11.9
— of the full-time labour force	%	1989	9.0	18.6	17.4	12.1	15.0
		1990	9.6	19.7	18.2	12.8	14.6
— of the part-time labour force	%	1989	9.7	15.8	8.2	12.3	14.4
		1990	10.1	15.6	7.6	12.9	13.5
— including persons on the margins of the labour force	%	1989	8.2	18.9	16.1	10.8	14.1
		1990	8.7	20.3	16.4	11.3	14.0
10 Underutilization rate based on hours lost through unemployment and underemployment	%	1989	9.5	19.3	17.8	12.8	15.6
		1990	10.2	20.3	18.5	13.5	15.4
11 Proportion unemployed 6 months or longer	%	1989	20.1	21.3	14.1	18.0	19.2
		1990	18.4	26.8	15.8	18.5	17.6

See notes at end of table.

Key labour and income facts

Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Year	Unit	No.
3,343	5,214	538	482	1,308	1,578	..	..	1989	'000	1
3,399	5,268	544	483	1,324	1,601	..	..	1990		
1.7	1.0	1.1	0.2	1.2	1.5	..	..		%
64.0	69.8	67.0	66.2	72.4	66.8	..	..	1989	%	2
64.3	69.4	67.6	66.8	72.1	66.0	..	..	1990		
3,031	4,949	498	446	1,214	1,435	..	..	1989	'000	3
3,055	4,937	505	449	1,231	1,469	..	..	1990		
0.8	-0.3	1.4	0.7	1.4	2.4	..	..		%
13.5	15.5	17.2	16.6	15.3	16.2	..	..	1989	%	4
13.8	15.8	18.2	17.1	15.0	16.7	..	..	1990		
31.8	13.5	21.9	27.9	19.3	25.8	..	..	1989	%	5
33.1	14.5	21.8	27.5	19.3	21.4	..	..	1990		
311	264	41	36	94	144	..	..	1989	'000	6
345	331	39	34	93	132	..	..	1990		
10.7	25.1	-2.9	-5.7	-0.9	-8.0	..	..		%
9.3	5.1	7.5	7.4	7.2	9.1	..	..	1989	%	7
10.1	6.3	7.2	7.0	7.0	8.3	..	..	1990		
4.3	1.5	3.0	3.1	2.5	3.6	..	..	1989	%	8
4.5	2.0	2.8	2.5	2.2	2.9	..	..	1990		
										9
7.8	4.7	6.0	7.4	6.5	8.3	..	..	1989	%	
8.6	5.6	5.9	6.7	6.5	7.7	..	..	1990		
9.3	4.9	7.3	7.3	7.0	8.9	..	..	1989	%	
10.1	6.0	6.9	6.9	6.8	8.1	..	..	1990		
9.3	5.0	7.5	7.4	7.1	9.0	..	..	1989	%	
10.1	6.2	7.2	7.0	7.0	8.2	..	..	1990		
11.3	5.8	9.2	9.6	8.3	10.8	..	..	1989	%	
12.2	7.1	9.1	9.1	8.1	9.8	..	..	1990		
10.7	8.0	9.8	9.7	9.9	12.3	..	..	1989	%	
11.8	9.1	8.9	9.5	10.5	10.4	..	..	1990		
10.5	5.3	8.0	8.0	7.5	9.5	..	..	1989	%	
11.3	6.5	7.7	7.5	7.3	8.6	..	..	1990		
11.7	6.2	9.7	10.2	8.9	11.3	..	..	1989	%	10
12.6	7.7	9.7	9.8	8.7	10.4	..	..	1990		
27.0	13.2	20.6	20.4	17.4	20.6	..	..	1989	%	11
23.7	13.8	19.3	16.7	15.3	16.5	..	..	1990		

See notes at end of table.

Key labour and income facts

No.		Unit	Year	Canada	Nfld.	P.E.I.	N.S.	N.B.
Other labour market indicators								
*12	Employed at some time in the year, male, age 16 to 69	'000	1987	7,584	152	36	235	191
	– as proportion of male population age 16 to 69	%		86.5	80.9	87.8	82.2	81.6
		'000	1988	7,688	157	37	241	195
		%		86.6	82.6	88.1	83.7	82.3
	Employed at some time in the year, female, age 16 to 69	'000	1987	6,042	110	30	191	153
	– as proportion of female population age 16 to 69	%		67.1	57.9	71.4	63.0	63.0
		'000	1988	6,337	120	32	197	164
		%		69.7	62.2	74.4	64.6	66.9
*13	Unemployed at some time in the year, male, age 16 to 69	'000	1987	1,497	59	11	59	59
	– as proportion of male population age 16 to 69	%		17.1	31.4	26.8	20.6	25.2
		'000	1988	1,366	51	11	89	55
		%		15.4	26.8	26.2	17.0	23.2
	Unemployed at some time in the year, female, age 16 to 69	'000	1987	1,345	46	9	55	48
	– as proportion of female population age 16 to 69	%		14.9	24.2	21.4	18.2	19.8
		'000	1988	1,247	44	10	49	43
		%		13.7	22.8	23.3	16.1	17.6
*14	Full-time, full-year male paid workers	'000	1987	4,035	55	14	115	89
			1988	4,017	63	13	121	87
	Full-time, full-year female paid workers	'000	1987	2,528	36	11	74	52
			1988	2,597	35	11	76	60
15	Days lost per full-time worker per year through illness or for personal reasons	days	1989	9.4	9.6	8.1	8.6	9.6
			1990	9.4	10.1	7.3	9.1	9.3
16	Proportion of paid workers absent two or more consecutive weeks because of illness or accident	%	1988	6.4	5.1	5.7	4.7	6.0
			1989	6.7	6.2	5.2	5.4	7.4
17	Workers receiving workers' compensation for time-loss injuries	'000	1988	618	10	2	11	12
	Change	%	1989	621	11	2	14	13
				0.5	6.2	0.6	23.9	8.0
*18	Help-wanted index (1981 = 100)		1989	152	196			
			1990	115	164			

See notes at end of table.

Key labour and income facts

Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Year	Unit	No.
1,921	2,886	305	280	718	859	..	..	1987	'000	12
83.5	89.2	88.2	87.5	88.3	85.6	..	..		%
1,962	2,909	303	277	729	877	..	..	1988	'000	
84.7	88.4	87.3	87.4	88.5	85.4	..	..		%
1,434	2,367	264	219	592	682	..	..	1987	'000	
60.2	71.2	72.7	68.7	73.4	66.7	..	..		%
1,542	2,462	257	228	621	716	..	..	1988	'000	
64.4	72.9	72.2	71.9	75.7	68.5	..	..		%
434	432	57	42	150	193	..	..	1987	'000	13
18.9	13.3	16.5	13.1	18.5	19.2	..	..		%
400	404	53	43	128	172	..	..	1988	'000	
17.3	12.3	15.3	13.6	15.5	16.7	..	..		%
375	424	51	40	127	171	..	..	1987	'000	
15.7	12.8	14.0	12.5	15.7	16.7	..	..		%
362	361	51	39	114	173	..	..	1988	'000	
15.1	10.7	14.3	12.3	13.9	16.6	..	..		%
1,028	1,666	148	128	370	423	..	..	1987	'000	14
1,014	1,661	153	123	356	425	..	..	1988		
610	1,052	107	81	239	265	..	..	1987	'000	
638	1,087	104	79	248	259	..	..	1988		
10.2	9.6	8.8	8.6	8.2	8.4	..	..	1989	days	15
10.5	9.5	9.0	8.0	7.3	8.5	..	..	1990		
8.1	6.2	6.2	5.2	5.5	5.5	..	..	1988	%	16
7.7	6.8	5.0	5.4	5.1	6.4	..	..	1989		
218	208	23	15	43	73	..	1	1988	'000	17
219	201	22	14	45	80	..	1	1989		
0.3	-3.6	-4.4	-6.7	3.3	8.4	..	-3.7		%	
173	167	90			128	..	..	1989		18
129	111	80			117	..	..	1990		

See notes at end of table.

Key labour and income facts

No.		Unit	Year	Canada	Nfld.	P.E.I.	N.S.	N.B.
Unemployment insurance								
19	Total beneficiaries	'000	1988	1,015	71	13	50	57
			1989	1,030	76	14	53	58
	Change	%		1.5	6.6	6.8	5.3	0.4
20	Total beneficiaries as a proportion of contributors	%	1988	7.9	28.7	21.2	12.4	17.6
			1989	7.8	29.9	21.7	12.7	17.1
21	Regular beneficiaries without reported earnings	'000	1988	780	58	10	38	47
			1989	785	61	10	39	47
	Change	%		0.6	5.7	5.8	1.6	-1.1
Earnings (including overtime) and hours								
*22	Average weekly earnings in current dollars	\$	1989	486.87	465.80	400.82	432.86	442.80
			1990	512.79	484.61	419.63	458.50	463.45
	Change	%		5.3	4.0	4.7	5.9	4.7
*23	Average weekly earnings in 1981 dollars	\$	1989	322.43	324.83	283.06	295.47	299.59
			1990	324.14	323.94	282.20	297.92	299.77
	Change	%		0.5	-0.3	-0.3	0.8	0.1
*24	Average weekly earnings of salaried employees in current dollars	\$	1989	598.87	559.86	522.94	537.24	552.16
			1990	635.97	586.43	548.55	580.85	580.34
	Change	%		6.2	4.7	4.9	8.1	5.1
*25	Average weekly earnings of salaried employees in 1981 dollars	\$	1989	396.60	390.42	369.31	366.72	373.59
			1990	402.00	392.00	368.90	377.42	375.38
	Change	%		1.4	0.4	-0.2	2.9	0.5
*26	Average weekly earnings of hourly paid employees in current dollars	\$	1989	388.20	363.16	264.60	341.66	362.48
			1990	403.41	372.40	280.59	357.91	371.54
	Change	%		3.9	2.5	6.0	4.8	2.5
*27	Average weekly earnings of hourly paid employees in 1981 dollars	\$	1989	257.09	253.25	186.86	233.22	245.25
			1990	255.00	248.93	188.70	232.56	240.32
	Change	%		-0.8	-1.7	1.0	-0.3	-2.0
*28	Average weekly hours of hourly paid employees	hrs	1989	31.8	34.8	31.7	32.7	34.1
			1990	31.5	34.6	31.5	32.2	33.7
*29	Average weekly overtime hours of hourly paid employees	hrs	1989	1.2	1.6	0.4	0.8	1.0
			1990	1.1	1.5	0.5	0.8	0.9
Major wage settlements								
*30	Number of agreements		1989	438	7	4	15	5
			1990	486	11	1	7	17
*31	Number of employees	'000	1989	983	11	3	19	12
			1990	1,129	18	-	15	28
*32	Increase in base rate on annual basis	%	1989	5.3	5.7	4.7	5.5	4.5
			1990	5.8	7.5	5.8	6.3	6.0

See notes at end of table.

Key labour and income facts

Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Year	Unit	No.
323	216	35	29	78	139	2	2	1988	'000	19
337	214	35	29	78	134	2	2	1989		
4.3	-1.2	2.1	-0.7	-0.8	-3.4	3.6	-1.9		%	
10.2	4.2	7.1	7.5	6.5	9.9	9.8	4.8	1988	%	20
10.4	4.0	7.2	7.5	6.3	9.0	-4.8	-8.8	1989		
259	151	26	22	60	106	1	1	1988	'000	21
270	147	26	22	59	101	1	1	1989		
4.4	-2.7	1.2	-0.5	-1.4	-5.8	-2.5	-8.3		%	
472.82	509.08	445.08	425.99	484.47	491.63	585.91	663.86	1989	\$	22
502.02	535.78	462.78	445.80	509.86	515.91	612.22	705.48	1990		
6.2	5.2	4.0	4.7	5.2	4.9	4.5	6.3		%	
312.71	326.33	299.11	289.59	339.98	342.60	..	..	1989	\$	23
318.54	327.89	297.23	290.42	338.33	340.98	..	..	1990		
1.9	0.5	-0.6	0.3	-0.5	-0.5	..	..		%
564.69	631.12	562.52	558.45	617.83	594.35	713.95	728.63	1989	\$	24
602.37	670.17	590.77	581.86	655.15	628.93	747.27	776.47	1990		
6.7	6.2	5.0	4.2	6.0	5.8	4.7	6.6		%	
373.47	404.56	378.04	379.06	433.56	414.18	..	..	1989	\$	25
382.21	410.14	379.43	379.74	434.74	415.68	..	..	1990		
2.3	1.4	0.4	-0.2	0.3	0.4	..	..		%
387.87	403.25	345.85	309.83	356.00	412.73	439.74	568.71	1989	\$	26
406.93	415.59	356.20	327.33	373.65	432.05	446.27	610.01	1990		
4.9	3.1	3.0	5.6	5.0	4.7	1.5	7.3		%	
256.53	258.49	232.43	210.63	249.82	287.62	..	..	1989	\$	27
258.20	254.34	228.77	213.24	247.94	285.56	..	..	1990		
0.7	-1.6	-1.6	1.2	-0.8	-0.7	..	..		%
32.6	32.0	31.2	28.8	30.5	30.5	32.1	33.8	1989	hrs	28
32.4	31.4	31.2	28.7	30.2	30.3	35.2	35.5	1990		
1.0	1.3	0.9	0.8	1.5	1.1	1.9	3.4	1989	hrs	29
0.9	1.1	0.9	0.9	1.6	1.1	2.2	3.8	1990		
37	155	7	16	51	49	..	..	1989		30
94	201	14	8	55	29	..	..	1990		
209	237	10	21	83	106	..	..	1989	'000	31
395	393	14	20	103	29	..	..	1990		
5.3	6.4	4.6	2.9	3.9	7.0	..	..	1989	%	32
4.8	6.8	5.6	4.0	5.6	6.9	..	..	1990		

See notes at end of table.

Key labour and income facts

No.		Unit	Year	Canada	Nfld.	P.E.I.	N.S.	N.B.
Labour income								
33	Labour income in current dollars	\$ million	1988	325.2	4.5	1.0	8.2	6.3
			1989	354.9	4.8	1.0	8.8	6.9
	Change	%		9.1	6.8	7.7	7.2	8.2
34	Labour income per employee in current dollars	\$	1988	30,327	26,312	22,360	25,594	25,402
			1989	32,326	26,715	23,481	26,798	27,007
	Change	%		6.6	1.5	5.0	4.7	6.3
35	Labour income per employee in 1981 dollars	\$	1988	21,090	18,998	16,393	18,256	17,990
			1989	21,408	18,630	16,583	18,292	18,272
	Change	%		1.5	-1.9	1.2	0.2	1.6
36	Net income from self-employment as a proportion of money income	%	1988	5.3	3.5	7.8	5.7	4.3
			1989	5.8	3.9	9.1	5.9	4.2
Earnings of full-time, full-year workers								
37	Average earnings of men working full time, full year	\$	1988	33,600	27,200	23,600	30,500	29,100
			1989	35,100	30,600	25,900	31,900	31,200
	Change	%		4.5	12.6	9.8	4.6	7.2
38	Average earnings of women working full time, full year	\$	1988	21,900	20,400	16,900	19,600	20,200
			1989	23,100	21,700	19,800	21,100	19,400
	Change	%		5.4	6.1	16.7	7.6	-3.8
39	Ratio of female to male earnings	%	1988	65.3	75.1	71.7	64.4	69.5
			1989	65.8	70.8	76.2	66.2	62.3
Family income								
40	Average family income	\$	1988	46,200	36,100	34,500	39,700	37,300
			1989	50,083	39,648	38,726	43,123	40,670
41	Median family income	\$	1988	41,200	32,900	30,700	36,400	33,300
			1989	44,460	35,652	34,548	37,649	36,344
42	Average income of unattached individuals	\$	1988	19,600	17,000	14,400	16,000	16,100
			1989	21,138	18,995	14,391	17,681	17,207
43	Median income of unattached individuals	\$	1988	15,000	12,900	12,000	11,300	12,100
			1989	16,598	14,667	11,723	12,441	13,029
*44	Average family taxes	\$	1988	8,600	5,100	4,700	6,700	5,800
			1989	9,645	6,198	5,917	7,386	6,638
*45	Average family income after tax	\$	1988	37,600	30,900	29,800	33,000	31,500
			1989	40,438	33,450	32,808	35,737	34,032

See notes at end of table.

Key labour and income facts

Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Year	Unit	No.
77.5	140.3	11.1	8.6	30.0	35.9	.4	1.0	1988	\$ million	33
83.2	154.7	11.7	9.0	32.6	40.3	.4	1.0	1989		
7.3	10.2	5.6	4.3	8.5	12.3	7.0	6.2			
29,183	32,434	26,601	24,969	29,651	30,336	1988	\$	34
30,831	35,124	27,749	26,470	31,101	31,987	..	..	1989
5.7	8.3	4.3	6.0	4.9	5.4	..	..	
20,126	22,004	18,720	17,721	21,675	22,095	1988	\$	35
20,391	22,516	18,648	17,995	21,825	22,291	..	..	1989
1.3	2.3	-0.4	1.5	0.7	0.9	..	..	
4.4	4.9	7.4	9.9	6.8	5.7	1988	%	36
4.4	6.4	5.7	10.8	5.6	5.9	..	..	1989
31,700	35,900	29,700	28,400	33,800	34,500	1988	\$	37
34,000	37,400	31,600	27,900	34,400	35,600	..	..	1989
7.1	4.2	6.3	-1.8	1.8	3.3	..	..	
20,900	23,300	20,200	19,200	22,100	21,300	1988	\$	38
21,200	25,200	20,700	20,400	22,800	22,600	..	..	1989
1.3	8.4	2.6	6.0	3.4	6.2	..	..	
65.9	64.8	67.9	67.5	65.3	61.8	1988	%	39
62.4	67.4	65.6	72.9	66.3	63.6	..	..	1989
41,300	52,800	43,100	40,400	46,300	45,300	1988	\$	40
44,860	57,330	46,551	42,978	49,734	49,442	..	..	1989
36,900	47,300	37,400	35,400	41,700	42,000	1988	\$	41
40,187	50,464	41,257	38,068	44,867	46,028	..	..	1989
17,400	21,700	17,100	17,100	20,500	21,000	1988	\$	42
18,302	24,059	19,208	18,670	20,932	22,338	..	..	1989
12,100	17,400	13,800	13,200	15,700	17,300	1988	\$	43
13,682	20,411	14,910	14,094	16,585	18,567	..	..	1989
7,900	10,100	7,700	7,000	8,300	8,100	1988	\$	44
8,861	11,403	8,568	7,666	9,224	9,345	..	..	1989
33,500	42,700	35,400	33,300	38,000	37,200	1988	\$	45
35,999	45,927	37,984	35,313	40,510	40,097	..	..	1989

See notes at end of table.

Key labour and income facts

No.		Unit	Year	Canada	Nfld.	P.E.I.	N.S.	N.B.
46	Proportion below the low income cut-off (1978 base):							
-	families	%	1988	10.5	15.5	10.0	10.8	12.6
			1989	9.6	12.8	9.0	11.4	11.9
-	unattached individuals	%	1988	33.1	35.5	33.2	39.4	35.7
			1989	30.5	32.0	35.1	34.7	36.3
-	persons (population)	%	1988	13.1	16.7	12.3	13.4	14.5
			1989	12.2	14.5	11.6	13.4	13.8
-	children (less than 16 years)	%	1988	15.4	20.7	12.6	15.2	18.3
			1989	14.6	19.7	13.9	16.6	17.6
-	elderly (65 years and over)	%	1988	17.2	19.2	17.5	16.9	15.0
			1989	15.9	13.8	14.6	13.8	12.8
Households and dwellings								
47	Average household income	\$	1988	40,700	34,200	31,100	35,400	34,300
			1989	43,838	37,501	34,273	37,693	36,792
48	Proportion of households with:							
-	VCRs	%	1989	58.8	59.9	50.0	62.1	57.0
			1990	66.3	67.6	62.2	66.7	64.0
-	microwaves	%	1989	63.4	52.1	47.7	62.5	59.9
			1990	68.2	56.6	57.8	67.9	66.8
-	two or more automobiles	%	1989	25.0	12.6	22.7	21.0	18.6
			1990	24.7	16.2	26.7	19.8	21.5
-	vans and trucks	%	1989	25.5	32.3	31.8	28.2	34.3
			1990	23.4	32.4	31.1	23.9	31.6
-	air conditioners	%	1989	24.6	...	...	2.6	5.8
			1990	24.4	...	...	3.5	5.7
49	Proportion of owner-occupied dwellings	%	1989	63.3	79.6	75.0	71.5	75.2
			1990	63.7	79.2	71.1	72.0	75.3
50	Proportion of all owner-occupied dwellings that are mortgage-free	%	1989	50.6	69.9	54.5	56.6	59.3
			1990	51.1	70.8	59.4	57.6	58.1
51	Number of occupied dwellings in need of repair	'000	1989	2,369	52	14	94	79
			1990	2,561	54	17	112	81
52	Dwellings in need of repair as a proportion of all occupied dwellings	%	1989	25.0	31.1	31.8	30.4	32.6
			1990	26.6	31.3	37.7	35.2	32.8
*53	Median rent-to-income ratio	%	1989	21	17	23	21	19
			1990	20	17	25	23	19

Key labour and income facts

Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Year	Unit	No.
										46
13.5	7.5	11.1	13.6	10.7	10.1	..	..	1988	%	
11.4	7.0	11.0	12.6	11.0	9.7	..	..	1989	%	
42.7	26.9	33.5	29.3	30.8	30.6	..	..	1988	%	
41.0	23.5	30.0	30.4	30.7	25.2	..	..	1989	%	
16.8	9.5	14.8	16.8	13.8	13.2	..	..	1988	%	
15.1	8.8	14.5	16.1	13.9	11.7	..	..	1989	%	
17.2	11.9	19.7	22.6	16.9	15.2	..	..	1988	%	
15.2	11.3	21.5	22.3	16.8	13.7	..	..	1989	%	
25.2	12.6	16.0	13.4	15.6	18.4	..	..	1988	%	
30.7	9.7	11.0	10.7	14.4	12.5	..	..	1989	%	
36,000	46,900	37,000	35,100	41,200	39,100	..	..	1988	\$	47
39,159	50,588	39,980	37,090	43,837	41,777	..	..	1989	\$	
										48
54.4	62.1	56.7	53.4	64.0	57.3	..	..	1989	%	
63.2	69.0	63.1	60.6	71.6	64.0	..	..	1990	%	
59.6	64.5	65.8	71.2	71.8	62.2	..	..	1989	%	
65.5	68.2	68.3	74.9	76.9	68.3	..	..	1990	%	
19.9	29.3	21.9	24.6	29.4	25.7	..	..	1989	%	
21.6	26.5	22.2	25.1	29.7	26.7	..	..	1990	%	
15.6	21.7	32.1	44.1	41.6	34.0	..	..	1989	%	
13.8	20.5	29.1	37.2	37.7	32.3	..	..	1990	%	
14.7	43.8	43.9	31.0	8.6	7.4	..	..	1989	%	
13.3	44.9	43.8	32.1	6.9	6.1	..	..	1990	%	
54.8	64.6	67.4	71.8	64.6	65.2	..	..	1989	%	49
55.2	65.6	67.8	70.7	65.8	64.2	..	..	1990	%	
46.9	49.4	55.4	61.1	48.3	50.2	..	..	1989	%	50
46.5	50.6	56.3	58.9	47.2	52.0	..	..	1990	%	
572	817	113	101	238	287	..	..	1989	'000	51
613	910	112	112	261	290	..	..	1990	'000	
22.8	24.0	29.5	28.2	27.5	24.1	..	..	1989	%	52
24.2	26.2	28.9	31.3	30.0	23.9	..	..	1990	%	
20	21	21	22	21	22	..	..	1989	%	53
19	20	20	21	20	23	..	..	1989	%	

Key labour and income facts

Notes and definitions

No.

- 1 Persons aged 15 and over who are employed or unemployed.
- 2 Labour force as a proportion of the population aged 15 and over.
- 4 Persons who usually work less than 30 hours per week.
- 7 Unemployed as a proportion of the labour force.
- 8 This rate, and rates shown as Indicators 9 and 10, are described in *The Labour Force* (71-001), February 1987.
- 9 The full-time labour force includes persons working full time, those working part time involuntarily and unemployed persons seeking full-time work.

The part-time labour force includes persons working part time voluntarily and unemployed persons seeking part-time work.

On the margins of the labour force includes persons not looking for work because they believe none is available or because they are waiting for recall or for replies from employers.

No.

- 10 The rate shows hours lost through unemployment (unemployed multiplied by average actual weekly hours) and through underemployment (that is, short-time work schedules and involuntary part-time employment) as a proportion of hours worked plus hours lost.
- 30 Data are for agreements involving bargaining units of 500 or more employees. Canada figures include workers covered by federal labour legislation plus agreements involving workers in more than one province.
- 33 Labour income comprises gross wages and salaries (including directors' fees, bonuses, commissions, gratuities, taxable allowances and retroactive pay) and supplementary labour income (payments made by employers for the benefit of employees, including contributions to health and welfare schemes, pension plans, workers' compensation and unemployment insurance).
- 34 Labour income per employee is calculated using LFS estimates of paid workers excluding those absent without pay.
- 44 For an explanation of the methodology underlying the low income cut-off, see *Income Distributions by Size in Canada* (13-207).

In the works

Here are some of the topics to be featured in upcoming issues of *Perspectives on Labour and Income*.

■ **The labour market: Mid-year review**

The first six months of 1991 will give a clearer picture of the recession's impact. How the labour market and other leading indicators have fared will reveal its severity.

■ **Women on the verge of retirement**

Statistics show that upon retirement women now participating in the labour market might not face the same economic hardships that many female seniors previously had.

■ **Early retirement: Option or fate?**

More and more workers are taking early retirement. This article looks at financial incentives to leave the work force (improved government and private pensions, RRSPs, and so on) and the income these retirees might have.

■ **Attitudes towards retirement**

Are people looking forward to retirement? Will a combination of work-related and government pensions allow them to live at an acceptable standard of living? What are their views on mandatory retirement? Recent results from the General Social Survey explore how Canadians are approaching retirement.

■ **Unemployed by occupation**

Despite good or bad economic times, occupation affects one's chances of becoming unemployed.

■ **Employment in small and large firms**

Smaller businesses have been the engines of employment growth in recent years. How jobs in these small firms compare with those in large firms is the focus of this article.

■ **Single-industry towns**

Many remote communities depend upon one main industry, such as fishing, forestry or mining. This study will examine a group of selected single-industry towns over the 1971 to 1986 period.

■ **Canada/United States income comparisons**

This study offers a look at various income topics such as relative income shares, wives' contribution to family income and the male/female earnings ratios in these two countries.

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40 Are jobs in large firms better jobs?

René Morissette

This study examines differences between large and small firms with respect to unionization, pension plan coverage, workers' susceptibility to layoffs, and wages.

51 Family income inequality in the 1980s

Roger Love and Susan Poulin

Are the rich getting richer and the poor getting poorer? This article studies the growth of family income and the distribution of after-tax income in the 1980s.

Symbols

The following standard symbols are used in Statistics Canada publications:

- .. figures not available
- ... figures not appropriate or not applicable
- nil or zero
- amount too small to be expressed
- P preliminary figures
- r revised figures
- x confidential to meet secrecy requirements of the Statistics Act

The paper used in this publication meets the minimum requirements of American National Standard for Information Sciences – Permanence of Paper for Printed Library Materials, ANSI Z39.48 – 1984.

Forum

From the editor

■ Summer is drawing to a close, and it's back to the "regular" routine for another 9 or 10 months. Add the dismal grey of fall and winter weather to the more hectic pace of life, and you would be forgiven for thinking that you'd like to retire and enjoy a life of leisure.

This issue of *Perspectives* takes a special look at Canadians who are doing precisely that. In "Retirement attitudes, plans and behaviour", Graham Lowe reports that 63% of retired Canadians left the work force before they were 65, and that 43% of working Canadians plan to retire early. Hubert Frenken, in "The pension carrot: Incentives to early retirement", proposes that the trend will continue as public and private pension programs introduced in the past two decades mature. And Diane Galarneau, writing about "Women approaching retirement", shows that women's financial position at retirement has improved with their increased level of labour force activity.

In the present climate of concern about the skills and composition of the Canadian labour force, early retirement is likely to become an even more important topic of inquiry for labour market analysts. A change of considerable magnitude is under way, and while one can argue that the 1981-82 recession may have accelerated the process, the trend is now well entrenched. A 1987 Statistics Canada study showed that

labour force participation rates among people 55 to 64 dropped dramatically in the 1980s; furthermore, almost half the 55 to 64 year-olds who were not in the labour force were retirees, compared with one-third 10 years earlier. Annual data show that participation rates of even younger workers (men aged 45 to 54) declined from 92.3% to 91.0% from 1987 to 1990. A similar phenomenon was observed in the United States.

At the same time that participation rates were dropping, Statistics Canada studies found that the number of workers regularly devoting 50-plus hours a week to the job was rising, particularly among paid workers. Male university graduates comprised the majority of these hard-working people. Earlier retirement and longer workweeks appear to be opposing trends, but they may, in fact, be complementary. If some people regularly work longer hours, they may be more likely to retire early than those who follow the standard 40-hour-week pattern. If there is some validity to this hypothesis, it has profound implications: given present life expectancy, people in the 45 to 64 age group will be retired for a long time. So what are they doing? Are they anything like "retired" as we now understand the word?

For one thing, they are probably not much like the people who retired early in previous decades. A 1980 Statistics Canada study of retired men aged 55 to 64 portrayed them as less educated and more likely to have worked in industries or occupations

requiring manual labour than men the same age who were still working. Many had retired because of ill health. If the present trend reflects the greater availability of flexible pension programs and therefore the opportunity to plan for an earlier retirement, this 1980 portrait probably does not describe early retirees today.

Currently used definitions of retirement are fairly restrictive. They hold that people are retired if they had worked, are not working now and do not intend to work in the future; alternatively, they are retired if they receive pensions from former employment. But "retirement" is rapidly changing and becoming just as fluid as many other aspects of the labour market. In fact, several recent developments in what people actually do once they leave their initial careers instantly blur the distinction between retirement and non-retirement. Some retirees take part-time jobs; others enrol in credit courses at college and university. (In an upcoming issue, Cynthia Haggard-Guénette writes about Canadians over 30 who have returned to school, 7% of whom are between 50 and 64.) It seems that retirement is not necessarily synonymous with a life of leisure any more.

Further complication of the concept of "retirement" stems from the new uncertainty about precisely what is meant by "work". Many theorists are urging statisticians to develop a means of capturing the work involved in home-making or household management, so as to include it in labour market and other economic models. If ways can be developed to measure these

activities with the same precision with which we measure paid or market-economy employment, the distinction between paid and unpaid work may largely disappear. Such a development would create fundamental confusion about the definition of retirement.

Perspectives will continue to monitor these developments.

Ian Macredie
Editor-in-Chief

□

Letters

■ Dear Editor:

Your new publication, *Perspectives on Labour and Income*, is very useful and informative. It helps us keep up to date on labor-related developments in Canada. In addition, the international comparisons articles have caught our attention. The comparative articles by Raj Chawla on participation rates and dependency ratios were interesting and well written. Congratulations to you and your colleagues for a fine publication.

Sincerely yours,

Edwin R. Dean
Associate Commissioner
for Productivity and Technology
U.S. Department of Labor

□

Highlights

Here are some key findings from the articles in this issue of Perspectives on Labour and Income.

Retirement attitudes, plans and behaviour

■ According to the 1989 General Social Survey, just over one in three Canadians support the idea of mandatory retirement. This support varies from around 30% in Alberta, Ontario and British Columbia, to 45% in Manitoba and 56% in Newfoundland.

■ Among the employed who favour compulsory retirement, about three in five believe the retirement age should be less than 65. Very few, only 2%, believe that mandatory retirement should be beyond that age.

■ Of the employed respondents, 43% want to retire before 65, about 14% at 65; 7% do not plan to retire and only 1% want to retire after age 65.

■ More employed women (41%) than men (28%) have no fixed retirement plans. As a reflection of this, proportionally fewer women than men plan to retire between the ages of 55 and 64.

■ Of Canadian retirees in 1989, 63% retired before 65, 16% after and only 17% at 65. Women were somewhat more likely than men to retire before age 65 (68% versus 62%).

The pension carrot: Incentives to early retirement

■ More and more men aged 55 to 64 are leaving the paid work force, as indicated by the steady decline in their labour force participation rate, from nearly 85% in 1969 to 65% in 1990.

■ By contrast, the female participation rate for the 55 to 64 age group rose slightly during that period; but, at 36% in 1990, it still remained much lower than the male rate.

■ In 1979, 21% of taxfilers aged 60 to 64 reported payments from employer-sponsored pension plans and annuity contracts, and 13% received Canada or Quebec Pension Plan (C/QPP) benefits. By 1988, these percentages had risen to 30% and 45% respectively.

■ The introduction of "flexible retirement" in 1984 (in the Quebec Pension Plan) and 1987 (in the Canada Pension Plan) presented retirement opportunities to people as early as age 60. In 1984, three out of every four persons receiving QPP pensions for the first time were between the ages of 60 and 64. In 1987, two-thirds of new CPP beneficiaries were aged 60 to 64.

■ Among men aged 60 to 64, income received from pension arrangements grew from 8% in 1979 to nearly 21% in 1988. But, for 58% of Canadian taxfilers aged 60 to 64,

earnings from employment still remained the largest source of income in 1988.

Women approaching retirement

■ The increased participation of women in the labour market has resulted in their increased membership in the Canada and Quebec Pension Plans (from 53% of all women aged 18 to 64 in 1978 to 63% in 1988), registered pension plans (from 17% to 21%) and registered retirement savings plans (6% to 17%).

■ Between 1978 and 1988, the proportion of women's total income derived from the Old Age Security and Guaranteed Income Supplement program fell from 47% to 40%, while the proportion attributable to the Canada and Quebec Pension Plans rose from 4% to 11%.

■ The average annual contribution to women's registered retirement savings plans dropped from \$2,600 in 1978 (in 1988 dollars) to \$1,500 in 1988 because of the effects of inflation on the contribution limit set by Revenue Canada.

■ The rules regarding registered pension plan (RPP) eligibility have been amended in recent years. For example, in most provinces, an employer who provides an RPP is now required to allow part-time employees, who are mostly women, to participate.

Are jobs in large firms better jobs?

■ Jobs in large firms (500 or more employees) are more likely to be unionized than jobs in small firms (fewer than 20

employees). Jobs in large firms are eight times more apt to be unionized in consumer services, seven times in distribution services, and two times in construction and in business services.

■ An hour worked in a large firm is, on average, more than five times more likely to be covered by a pension plan than in a small firm. This ratio is much higher in non-unionized jobs than in unionized jobs; therefore, unionization not only increases the chances of being covered by a pension plan, it also reduces the gap in pension plan coverage between large and small firms.

■ The chance of a worker being permanently laid off decreases as firm size increases.

■ After taking into consideration differences in workers and their jobs, large firms pay 21% higher wages than small firms.

Family income inequality in the 1980s

■ Although average family income at the end of the 1980s was little changed from the beginning of the decade, there was a decline of 6% from 1980 to 1983 and an increase of 7% from 1984 to 1989. This observation contrasts sharply with earlier decades when the average family income was substantially higher at the end of each period.

■ In 1989, the distribution of after-tax income of families, ranked according to the size of their income, showed an average income for the top 10% (decile) of \$88,800 compared with \$11,600 for the lowest decile.

■ Even though the variations were not large, income inequality increased until 1984, then declined until the end of the decade.

■ For the first four years of the decade, there was evidence of a declining proportion of families in the middle income group and an increased polarization in the income distribution. This trend reversed in the last half of the 1980s. □

What's new?

Look it up in "Sources"

- ▶ Canadian adults take training or educational courses
- ▶ Income profiles of husband-wife families in small areas
- ▶ Survey of school leavers to help lower drop-out rates
- ▶ Aging and independent living survey under way
- ▶ One in five accidents in Canada happens on the job
- ▶ Full report coming soon on results of the literacy survey
- ▶ Guide to data sources for labour market analysts
- ▶ Report on the 1991 Association des économistes du Québec conference
- ▶ Forum on labour market policies

Retirement attitudes, plans and behaviour¹

Graham S. Lowe

Canada is experiencing a "seniors boom". Now about 1 in 10 Canadians is age 65 or over; by 2031 this figure is projected to rise to about 1 in 4 individuals.² As Canadian society ages, the issues of retirement and pensions become increasingly important.³ This article uses data from the 1989 General Social Survey (GSS) to examine Canadians' opinions towards mandatory retirement, their retirement plans, and pensions. It also reviews the incidence of pensions and the reasons for retirement among the retired population.

Attitudes towards mandatory retirement

Canada introduced the current universal old age income security system during the 1950s and in 1966, the employment-related Canada and Quebec Pension Plans. Because these public (and most private) pensions started paying benefits at age 65, this became accepted as the age of retirement.⁴

However, growing numbers of Canadians are beginning to oppose mandatory retirement at age 65. Public debates about mandatory retirement are heating up, especially in the wake of the Supreme Court of Canada decision backing the principle.⁵

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Some people may see employment after age 65 as a financial necessity because of inadequate pensions, although fewer are working beyond this age.⁶ Other trends, such as multiple careers, early retirement, gradual retirement, and post-retirement re-employment, are also eroding the conventional practice of working until around age 65 and then abruptly entering the retirement phase of life.⁷

More than one in three Canadians 15 years of age or older (over 7 million individuals) support the idea of mandatory retirement (Table 1). This varies from around 30% in Alberta, Ontario and British Columbia to 45% in Manitoba and 56% in Newfoundland. These provincial variations are more pronounced than the differences in support for mandatory retirement across age groups.

Among individuals currently working at a job or business, opinions vary by occupation (Table 2). About 46% of workers in manufacturing-related occupations⁸ and 41% in construction trades and transport equipment operating occupations support mandatory retirement, while only 19% of those employed in social sciences, 20% in artistic and literary jobs, and 24% in teaching and in sales do.

Among employed men, 36% support mandatory retirement, compared with 30% of employed women. Higher male approval for mandatory retirement is even more

Table 1
Population in favour of mandatory retirement, by age and province, 1989

	Total	15-24	25-44	45 +
	%			
Canada	35	34	34	38
Newfoundland	56	51	58	56
Prince Edward Island	34	..	..	..
Nova Scotia	37	24	41	40
New Brunswick	42	49	39	41
Quebec	42	43	41	42
Ontario	31	27	30	34
Manitoba	45	41	40	51
Saskatchewan	40	44	37	40
Alberta	29	30	28	31
British Columbia	31	28	29	35

Source: General Social Survey

Table 2
Proportion of those currently employed in favour of mandatory retirement, by occupation and sex, 1989

	Total	Men	Women
	%		
Total	33	36	30
Managerial/ administrative	29	27	31
Science/engineering	30	29	33
Social sciences	19	18	20
Teaching	24	28	21
Medicine/health	28	31	27
Artistic/literary	20	..	20
Clerical	32	39	30
Sales	24	28	20
Service	40	43	38
Primary	32	32	..
Manufacturing-related*	46	47	45
Construction/ transportation	41	42	..
Other occupations	49	50	45
Not stated	32	..	..

Source: General Social Survey

* This comprises processing, machining and related occupations; and product fabricating, assembling and repairing.

1989 General Social Survey (GSS) questions on retirement

All respondents were asked:

- "At what age do you plan to retire?" (The actual age was recorded, as were "don't know" and "don't intend to retire" responses.)
- "Do you think that mandatory retirement is a good idea?" If respondent answered "yes":
- "At what age?"

Respondents whose main activity at the time of the survey was working at a job or business were asked:

- "Does your business/company provide you with a pension plan?"

Retired respondents were asked:

- "In what year did you retire?"
- "What kind of work were you doing?" (at the time of retirement)
- "Did you retire because you reached mandatory retirement age?"

If the respondent did not retire because mandatory retirement age was reached:

- "Did you retire because your employer offered an early retirement incentive? because new technology was introduced? because your health required it? or any other reason?"
- "Do you receive a pension or retirement benefits from any of your former employers?" If "yes":
- "Are these benefits adjusted for changes in the cost of living?"

pronounced in sales, clerical, and teaching occupations.

Attitudes towards mandatory retirement are influenced by level of education, household income, main activity, and access to a pension plan. Support for mandatory retirement is inversely related to education and income. That is, the higher the level of education or household income, the less likely the respondent is to endorse mandatory retirement. Individuals who are retired or keeping house generally respond more favourably towards mandatory retirement than students or the employed.

Higher socio-economic status appears to provide workers with both the human capital and financial resources to make early

retirement a viable option. However, the influence of socio-economic characteristics on opinions regarding mandatory retirement is more complex than this. For example, employed individuals with employer-sponsored pension plans (more common in higher status jobs) are more supportive of mandatory retirement than workers without employer pension plans. A likely reason for this finding is that pension plans often calculate benefits using age 65 as the customary mandatory retirement age. However, a thorough examination of the possible determinants of attitudes towards mandatory retirement falls beyond the scope of the 1989 GSS.

Suggested mandatory retirement age among the employed

Certainly part of the explanation for differences in attitudes towards mandatory retirement is the lack of consensus regarding the ideal retirement age. Among currently employed respondents who agree in principle with mandatory retirement, 59% believe that the age should be 64 or less, whereas 37% feel that it should be 65 (Table 3). Very few believe that the age should be set beyond 65.

Age has a minor influence on views about the ideal mandatory retirement age among the employed. Baby boomers (aged 25 to 44 years) and individuals aged 45 to 54 are predisposed to having retirement mandatory at an age less than 65. About two-thirds of the individuals in each of these groups support mandatory retirement before age 65.

Having a university degree or a high household income is associated with a preferred retirement age of 65, rather than earlier. This seems inconsistent with the socio-economic patterns of support for mandatory retirement. Early retirement may be a realistic option for the better-educated and more affluent. One indication of this is the somewhat higher support for

Table 3
Employed, aged 15 and over, in favour of mandatory retirement by suggested retirement age and selected characteristics, 1989

	Suggested mandatory retirement age		
	< 65	65	Other*
	%		
Total	60	37	3
Age group			
15-24	50	43	7
25-44	64	34	3
45-54	65	34	--
55 +	48	50	--
Educational attainment			
University degree	47	46	7
Postsecondary diploma	63	35	--
High school diploma	58	39	3
Less than high school diploma	65	33	2
Household income			
Under \$30,000	62	36	--
\$30,000-\$59,999	64	35	1
\$60,000 or more	55	40	5
Don't know	47	46	7
Not stated	59	36	--
Pension plan at work			
Yes	62	36	2
No	57	39	4
Don't know	62	34	--

Source: General Social Survey

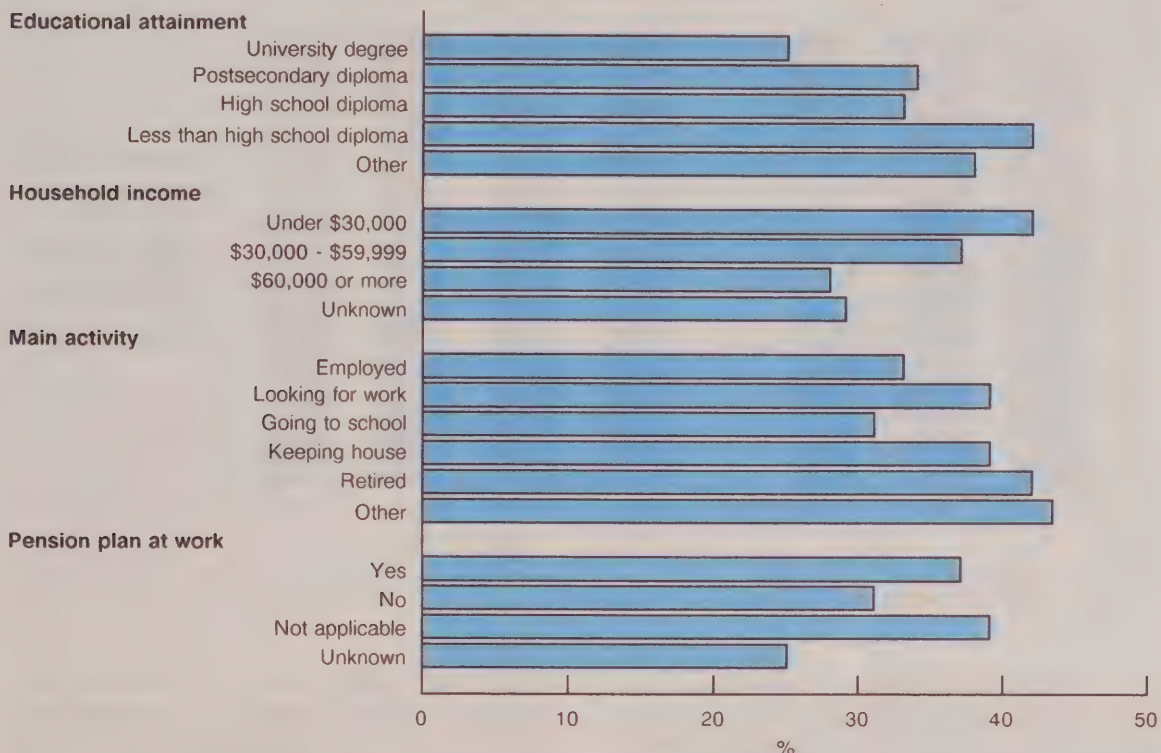
* Over 65 or not stated.

mandatory retirement before age 65 among workers with employer-sponsored pension plans. Yet, at the same time, the more interesting and challenging jobs of these individuals might encourage them to work until age 65.

How consistent are opinions about mandatory retirement with retirement plans? Overall, support for mandatory retirement is strongest among employed individuals who do not know when they will

Population 15 and over in favour of mandatory retirement by selected characteristics, 1989

Overall, about one-third of the population 15 and over favoured mandatory retirement.



Source: General Social Survey

retire. Looking only at workers who plan to retire at a specific age, support for mandatory retirement at less than age 65 is highest among those intending to retire between ages 55 and 59. Not surprisingly, support for retirement at age 65 is strongest among those who plan to retire at this age.

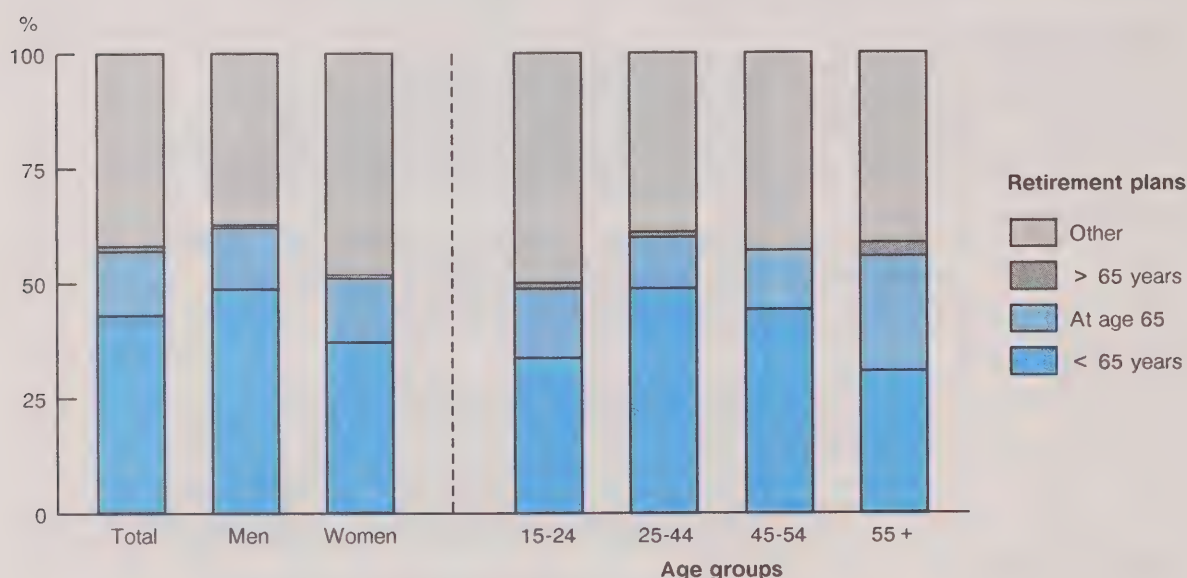
In sum, a large majority of Canadians are opposed to the idea of mandatory retirement. But among the minority who favour it, there is strong support for a mandatory retirement age of less than 65.

Retirement plans

The question of current employees' retirement plans deserves closer scrutiny, given its implications for pension funds and future labour supply. Among the currently employed, over two-fifths intend to retire before age 65, while about one-third do not know when they plan to retire. Only 14% opt for the conventional retirement age of 65. The rest do not plan to retire (7%) or else want to retire after age 65 (1%).

Planned retirement age of the employed, 1989

Almost one-half of baby boomers plan to retire before age 65.



Source: General Social Survey

Significantly more women than men (41% versus 28%) don't have fixed retirement plans. As a result, proportionally fewer women than men plan to retire between the ages of 55 and 64.

Age is also associated with retirement plans – older employees are more likely than their younger counterparts to have chosen an age to retire, and those closest to retirement (55 years or older) are most likely to plan not to retire, or to retire at age 65. Retiring earlier than age 65 is a definite preference expressed by baby boomers. Indeed, almost half of this cohort plans to retire before the age of 65.

Occupational variations exist as well, but overall, age and sex are more influential in determining retirement plans. Focusing on white-collar occupations, clerical, sales, and service employees are less likely to have

retirement plans than respondents in managerial/administrative, science/engineering, and teaching jobs (Table 4). This may result from the high proportion of women – who generally are less certain about retirement plans – in clerical, sales, or service occupations. Turning to blue-collar jobs, relatively fewer employees in primary jobs stated a retirement age than did respondents in manufacturing-related, or construction/transportation jobs.

Of course, other factors are also important. Given that retirement decision making necessarily involves financial planning, income and access to an employer-sponsored pension exert major influences (Table 4). For example, 39% of individuals with lower household incomes have no retirement plans, compared with 24% of those in households with incomes of \$60,000

Table 4
Employed by planned retirement age and selected characteristics, 1989

	Planned retirement age*					
	< 55	55-59	60-64	65	Don't plan to retire	Don't know
	%					
Total	10	19	14	14	7	34
Occupation						
Managerial/administrative	11	22	17	11	9	26
Science/engineering	9	28	14	10	7	31
Social sciences	--	11	--	17	13	38
Teaching	8	26	13	15	8	28
Medicine/health	11	18	16	12	8	34
Artistic/literary	12	12	--	--	19	41
Clerical	11	16	13	14	5	39
Sales	9	18	13	12	9	36
Service	12	11	13	17	7	39
Primary	--	17	9	15	9	40
Manufacturing-related**	10	23	16	17	3	30
Construction/transportation	13	24	15	12	7	27
Other occupations	--	21	18	16	--	36
Household income						
Under \$30,000	6	13	13	19	8	39
\$30,000-\$59,999	12	23	16	14	5	28
\$60,000 or more	14	25	16	10	9	24
Don't know	7	8	9	12	9	54
Not stated	5	13	11	11	8	41
Pension plan at work						
Yes	10	26	16	14	4	29
No	11	13	12	14	10	38
Don't know	--	--	14	12	10	53

Source: General Social Survey

* About 2% of the employed planned to retire after age 65 or else did not specify an age for retirement, therefore rows do not add to 100%.

* This comprises processing, machining and related occupations; and product fabricating, assembling and repairing.

or more. In contrast, 55% of individuals in high-income households are planning early retirement, whereas less than one-third of those in lower-income households have such intentions.

Having an employer-sponsored pension plan makes early retirement more feasible. Over half of workers with employer pension plans want to retire early, compared with just over one-third of those without such pensions. Thus, having a company pension also facilitates making concrete retirement plans, especially before age 65.

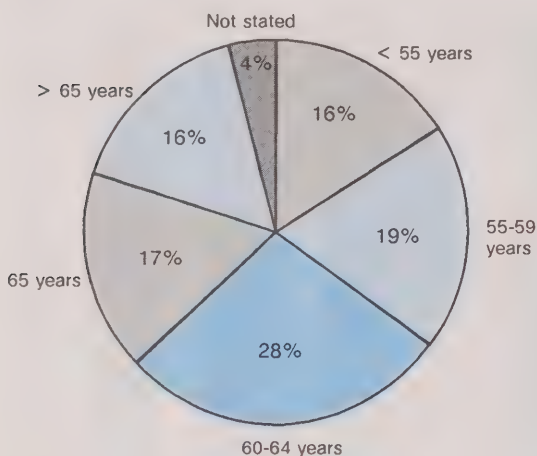
The basic finding to emerge, then, is that the planned retirement ages reported by currently employed individuals typically are less than the traditional mandatory retirement age of 65.

Age at retirement

Survey respondents already in retirement were asked if they retired because they had reached mandatory retirement age.⁹ Answers to this question give an estimate of how closely Canadians' retirement behaviour conforms to the expected norm, age 65.

Retired population by age at retirement, 1989

More than 60% of retirees left employment before age 65.



Source: General Social Survey

Dividing the currently retired population into three groups – those who retired before age 65, at age 65, and after age 65 – reveals that 63% of retirees in Canada retired before reaching age 65. Only 17% retired at age 65, while another 16% retired after age 65. Women were somewhat more likely than men to retire before reaching 65 (68% versus 62%).

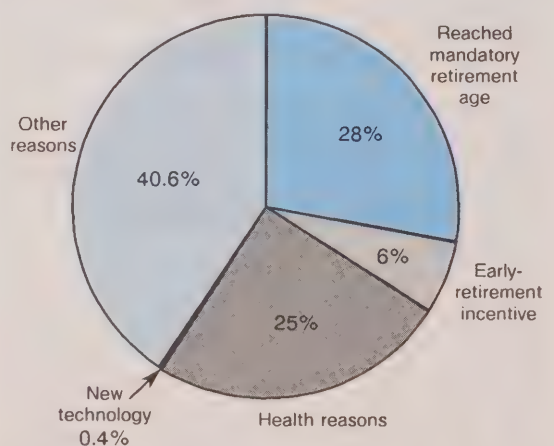
Generally, actual retirement age seems to vary little by type of former occupation. However, looking at men and women separately reveals occupation-specific retirement patterns. Men formerly employed in clerical, sales or service jobs were less likely than managerial/professional or blue-collar males to retire before age 65. However, the reverse holds true for females, with a much higher proportion of women in clerical, sales and service jobs retiring before age 65.

Turning to the reason for retiring, 28% of respondents retired because they had reached mandatory retirement age. Health reasons were an important cause of retirement, cited by one-quarter of the formerly employed. Only 6% retired because they had been given early-retirement incentives. And the number who retired because of the introduction of new technology was insufficient for reliable estimates. However, the largest group (41%) falls into the "other reasons" category. Analysis of these "other" responses identifies two predominant categories: personal choice or preference, and marriage or family responsibilities (cited mainly by women).

The GSS provides a rather broad-brush picture of retirement behaviour. To more fully understand occupational and sex differences in retirement behaviour requires data on labour force status (full-time or

Retired population by reasons for retirement, 1989

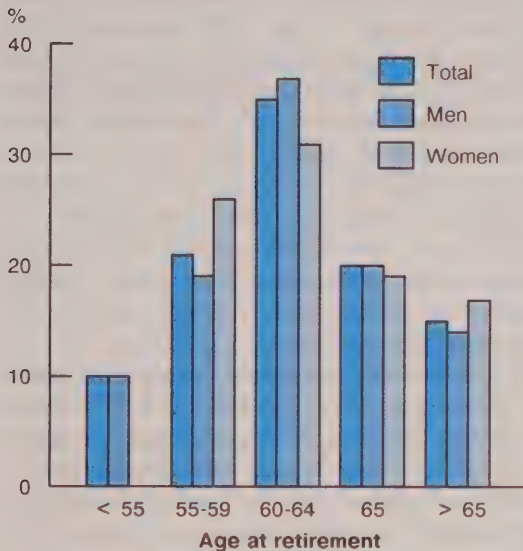
Just over one-quarter of all individuals retired because of mandatory retirement.



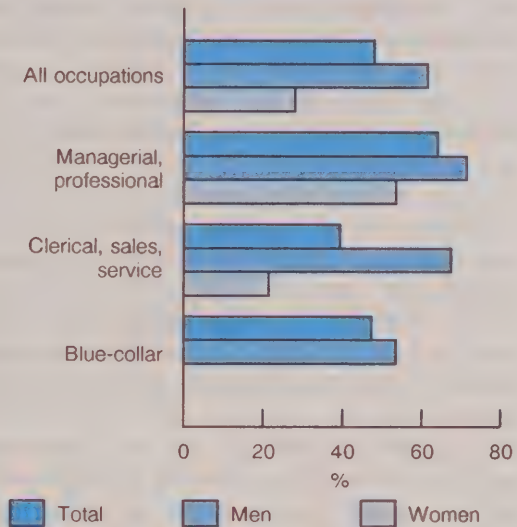
Source: General Social Survey

Retired population receiving employer-sponsored pension plan benefits, 1989

Among retired individuals with employer-sponsored pension plan benefits, almost two-thirds retired before age 65.



Regardless of occupational group, retired men were more likely to receive employer-sponsored pension plan benefits.



Source: General Social Survey

part-time, full-year or part-year), years in the labour force, and more occupational details.

However, the GSS does document whether retirees are receiving pension or retirement benefits from former employers. Again, men and women exhibit distinct patterns in this regard. For men, receiving a pension increases the likelihood of retiring before age 65, whereas not receiving a pension or retirement benefits is associated with retiring after age 65. Among women, those with no employer pension benefits are more likely to retire earlier.

Pensions among the retired

This last point raises questions about the distribution of pension and retirement benefits among the currently retired. Pensions represent one means of support in old age.¹⁰ Although pension reform has been on the public agenda for some time now,¹¹ the aging of the baby boom generation will likely increase the pressure for pension reform and for more employers to provide pension benefits.

Within this context, it is useful to know more about employer-sponsored pension benefits received by those already

retired. Almost half of the currently retired receive pensions or retirement benefits from former employers. Overall, 3 in 5 retired men receive pension benefits from former employers, compared with less than 3 in 10 women. (Lack of access to private pensions is one of the contributing factors to the higher incidence of poverty among elderly women. This may be changing, however – see "Women approaching retirement" by D. Galarneau in this issue.) Former managers and professionals of either sex were most likely to be receiving pension benefits (71% of men, 53% of women). Among men, a similarly high proportion of former clerical, sales and service employees received pensions (67%). This is in sharp contrast to the situation for women – only 21% of former clerical, sales and service employees received pensions.

Overall, 58% of retirees receiving pensions have these benefits at least partially indexed for inflation. In a curious reversal, women receiving pension benefits are actually more likely to have them adjusted to the cost of living than are men (65% versus 56%). One possible explanation is that proportionally more women than men receiving pension benefits were formerly employed in the public sector, where indexed pensions are more common.

Conclusion

The process of population aging, especially as the baby boom generation grows older, will be accompanied by changes in how society defines work and retirement. Based on the findings of the 1989 General Social Survey, retirement-related attitudes and behaviour seem to be undergoing adjustment. The majority of Canadians reject mandatory retirement. Few agree with the custom of having employees retire at age 65. And only a small minority plan to retire at age 65 or later. What is now called early retirement will likely become more prevalent, particularly among men in the baby boom generation.

But the big questions remaining point to the future. Will the attitudes and plans regarding retirement documented above, be reflected in legislation affecting pensions and retirement or in private pension provisions? Equally important, what will baby boomers do after retiring early: begin other careers (perhaps part-time), engage in voluntary activities, return to school, or pursue recreational interests? Whatever trends emerge will have enormous implications for Canadian society. □

Notes

¹ This article draws from G.S. Lowe's report "Education, work, computers, and retirement: challenges for the 1990s" (Summer 1991).

² See L.O. Stone and S. Fletcher, *The seniors boom: dramatic increases in longevity and prospects for better health* (1986) and Statistics Canada, *A portrait of seniors in Canada* (1990).

³ For discussions see B.T. Wigdor and D.K. Foot, *The over-forty society: issues for Canada's aging population* (1988); S.A. McDaniel, *Canada's aging population* (1986); and P.L. McDonald and R.A. Wanner, *Retirement in Canada* (1990). Issues relevant to Canada are also examined in K. Dychtwald and J. Flower, *Age wave: the challenges and opportunities of an aging America* (1989).

⁴ On the history of retirement in Canada see McDonald and Wanner, op. cit., ch. 2.

⁵ Compare, for example, M. Gunderson and J. Pesando, *Canadian public policy* (1988) and M. Krashinsky, *Canadian public policy* (1988). Also see Wigdor and Foot, op. cit., pp. 26-30; and Canadian Union of Public Employees, *The facts* (Fall 1989), special issue on pensions.

⁶ See C. Lindsay and S. Donald, *Canadian social trends* (1988).

⁷ Researchers are only beginning to thoroughly examine some of these trends. In the absence of Canadian studies, it is useful to consider the American experience. See, for example, P.B. Doeringer, ed.,

Notes – Concluded

Bridges to retirement: older workers in a changing labor market (1990) and A. Fontana and J.H. Frey, *Work and occupations* (1990).

⁸ This comprises processing, machining and related occupations; and product fabricating, assembling and repairing.

⁹ The retired population is defined as those individuals who, during the week prior to the survey, reported retired as their main activity (as opposed to

working at a job or business, looking for work, student, or keeping house) and who had ever worked at a job or business.

¹⁰ Wigdor and Foot, op. cit., p. 41.

¹¹ National Council of Welfare, *Pension reform* (1990).

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The pension carrot: Incentives to early retirement

Hubert Frenken

The Supreme Court of Canada decision of December 6, 1990, upholding the concept of mandatory retirement, has revived the seemingly perennial debate: should 65 be the age at which workers must retire? This ruling, however, may affect few workers. Research shows that few persons would continue working beyond age 65, should mandatory retirement be abolished across Canada.¹

Indeed, data from several sources indicate that there has been and continues to be a trend towards early retirement in Canada, rather than towards postponement. This is the case for Canadian men especially. The evidence also suggests that an increasing number of early retirements are voluntary, as opposed to mandatory.

What does it mean to be retired?

Retirement is a complex process, unique to each person. Its timing may be determined by personal factors such as work history, financial and physical well-being, leisure interests and family support. It may also be influenced by economic and social conditions such as labour force needs, the state of the economy, health care delivery, social and leisure services and retirement policies. This

article does not attempt to specifically define retirement. Rather, it presents two criteria that are accepted by many as retirement indicators: withdrawal from the labour force and replacement of employment income with pension income.

These criteria have some limits in their application. For example, persons who have left the labour force for non-voluntary reasons such as illness or layoff and have given up trying to find other employment may not regard themselves as retired, yet they are not counted in the paid work force. On the other hand, some individuals, retired from a full-time paid position but involved in other paid work – possibly self-employment, possibly part-time – may regard their activity as part of retirement behaviour, even though they are still in the labour force.

Using the concept of a change in a person's main source of income, from employment earnings to pension benefits, as a retirement indicator also has limits. Some people receive income from both employment and pension sources for many years.

Despite their limitations, these criteria are used in this article to demonstrate the trend to early retirement that has evolved in the last 20 years.

How do we determine when a person's retirement is early? In recent decades both employment practices and retirement income programs considered 65 to be the most likely age for individuals to retire. It was most frequently the maximum age to

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which many employers retained workers. Since 1970 it has been the age of eligibility for Old Age Security benefits and until recently it was the earliest age Canada and Quebec Pension Plan contributors could receive retirement benefits. Also, most employer-sponsored pension plans designate 65 as the normal retirement age. Early retirement, therefore, is defined as retirement before age 65. The focus of this article is the 55 to 64 year-old population.

Fewer men working

The trend toward early retirement seems to be much more pronounced among men than women. The labour force participation rate of men aged 55 to 64 declined steadily over the past two decades, from nearly 85% in 1969 to 65% in 1990. For women in this age group, however, the participation rate actually rose slightly. But, at 36% in 1990, it still remained much lower than the male rate. This slight increase must be considered in the context of the entry of large numbers of women into the labour market during this period and the dramatic increases in the female participation rate at younger ages. These entries seem to have more than offset any early-retirement departures.

Why are older workers, particularly men, leaving the labour force in increasing numbers at younger ages? Poor health and job loss with little possibility of being rehired cannot adequately explain this trend. In fact, Labour Force Survey information on this growing group identifies voluntary retirement more and more often as the principal reason for leaving.²

More pensioners

Having adequate and accessible pension income is cited in a number of studies as the dominant factor in workers' retirement decisions. It has been argued that most individuals would retire earlier if they could afford to do so.³ In recent years, an

Taxfilers aged 55 to 64 classified by largest source of income

While the proportion of older taxfilers classified as employees and self-employed persons has decreased, the proportion classified as pensioners has grown.



Source: Revenue Canada-Taxation

Note: An additional 9% of taxfilers are unclassified each year.

increasing number of workers seem to have achieved such a goal.

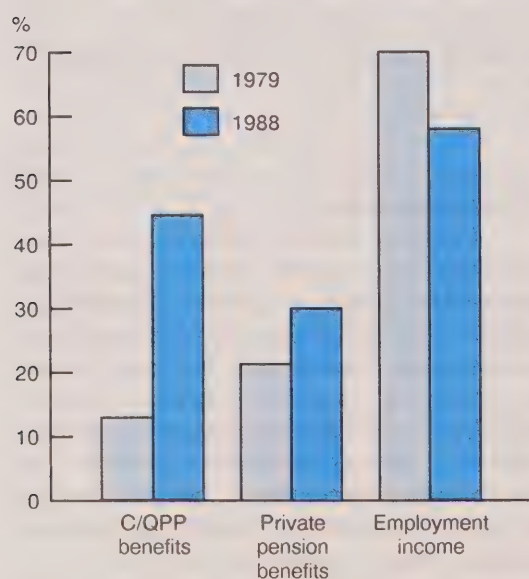
Personal income tax data reveal that, in the last two decades, pension income has increased in relative importance for taxfilers aged 55 to 64, while income from paid work and self-employment has decreased. Revenue Canada's taxation statistics classify individual taxfilers into specific groups, based on their largest source of income. One group, called pensioners, has its largest source of income from public and private pension arrangements. In 1969 just 3% of taxfilers aged 55 to 64 were identified as pensioners. By 1979 this proportion had increased to 8% and by 1988 it was 18%.

A corresponding decline took place in the proportion of taxfilers whose largest source of income was from paid work or self-employment. This group decreased from 88% of all 55 to 64 year-old taxfilers in 1969 to 69% in 1979 and 58% in 1988. These increases in the proportion of taxfilers classified as pensioners and decreases in the proportion identified as employees or self-employed workers were similar for men and women.

Some caution may be called for on the use of the data classifying taxfilers as pensioners. Retirees are excluded from this classification if the largest share of their total income is from sources other than pension plans, such as investments or rental

Taxfilers aged 60 to 64 with income from pension programs and employment

The share of 60 to 64 year-old taxfilers reporting benefits from pension programs has grown extensively.



Source: Revenue Canada-Taxation

Note: In addition to retirement pensions, C/QPP and private pension benefits include disability and survivors' pensions.

property. In fact, 9% of all 1969 and 14% of all 1979 and 1988 taxfilers aged 55 to 64 were identified as investors and property owners. While about 600,000 of the 1.9 million taxfilers in this age group reported pension benefits on their 1988 tax returns, only 350,000 were identified as pensioners.

A review of all taxfilers reporting pension income shows that the percentage reporting such benefits on their tax returns increased more quickly during the 1980s than in the 1970s. Also, this percentage is considerably higher for the 60 to 64 year-old group than for those aged 55 to 59.

In 1979, 21% of taxfilers aged 60 to 64 reported payments from employer-sponsored registered pension plans (RPPs) and annuity contracts, and 13% had Canada or Quebec Pension Plan (C/QPP) benefits. By 1988, however, 30% of this group had RPP and annuity income and nearly 45% received C/QPP benefits. Conversely, the proportion of these taxfilers reporting income from paid work and self-employment decreased, from 70% in 1979 to 58% in 1988.

A further limit on the use of Revenue Canada's taxation statistics is the impact of non-taxfilers. The proportion of the population aged 55 to 64 that did not file a tax return has decreased considerably in the last two decades. When measured in terms of the proportion of the total population aged 55 to 64, the growth in pension beneficiaries, as revealed in the tax data, is even more pronounced. (See *Taxation statistics* for further details.)

Despite the limitations inherent in these data, there is evidence of changes in the relative importance of various income sources for a growing number of older taxfilers, both men and women. These changes, combined with a drop in male labour force participation, show that there has been a trend to early retirement in Canada.

Taxation statistics

The Revenue Canada taxation statistics sample file is used in this study. A weakness of this file is the incidence of non-taxfilers. In 1969 just 63% of the 55 to 64 population filed returns. By 1979 this share had increased to 74% and in 1988 it was 82%. While the proportion of the male population in this age group filing tax returns increased only slightly (from 87% in 1969 to 94% in 1988), the percentage for women grew dramatically, from 38% to 70%. Only those individuals with a tax liability are required to file returns. However, in order to obtain certain grants and allowances, such as federal sales tax credits, child tax credits and provincial tax credits, the filing of a tax return is essential. The growth in the filing rate can be attributed to a large extent to the introduction of these tax credits.

Public pension income is the income reported by taxfilers as received from the Canada and Quebec Pension Plans (C/QPP) only. Old Age Security benefits, payable at age 65 or older, are not relevant here. Excluded also are non-taxable sources of income such as Spousal Allowance payments. These benefits (nearly \$483 million in the 1987-88 fiscal year) are paid to low-income 60 to 64 year-old individuals who meet Health and Welfare Canada requirements. There were 139,000 such recipients in 1987-88.

Private pension income includes employer-sponsored pension plan (RPP) benefits and annuity payments from registered retirement savings plans (RRSPs), deferred profit sharing plans (DPSPs) and registered retirement income funds (RRIFs) plus the income portion of general annuities. Lump-sum RRSP withdrawals are excluded.

The number of pension beneficiaries is inflated to some extent, since not all received retirement pensions. Payments from RPPs and especially the C/QPP include supplementary benefits, such as disability and survivors' pensions. In fact, nearly all of the 1979 and about one-half of the 1988 female C/QPP beneficiaries aged 60 to 64 had received survivor pensions, rather than retirement benefits.

For details on the Revenue Canada sample file consult the publication *Taxation Statistics 1990* or call Revenue Canada at (613) 957-8398.

Incentives and responses

A number of factors have contributed to the declining labour force participation rates for men and the changes in sources of income for men and women aged 55 to 64. Long-term developments, as well as some recent innovations, have increased voluntary early retirement opportunities, unheard of not many years ago.

In the long term, there have been dramatic improvements in pension accumulations by Canadian workers and advancements in the timing of access to these benefits. These developments, evident in all three earnings-related pension programs – the Canada and Quebec Pension Plans (C/QPP), employer-sponsored pension plans (RPPs) and registered retirement savings plans (RRSPs) – are the result of legislative changes and voluntary responses to new opportunities.⁴

In the last 10 years some employers have provided incentives for early retirement on an ad hoc basis to cushion the negative effects of "downsizing" their work forces.⁵

Tremendous impacts of the C/QPP

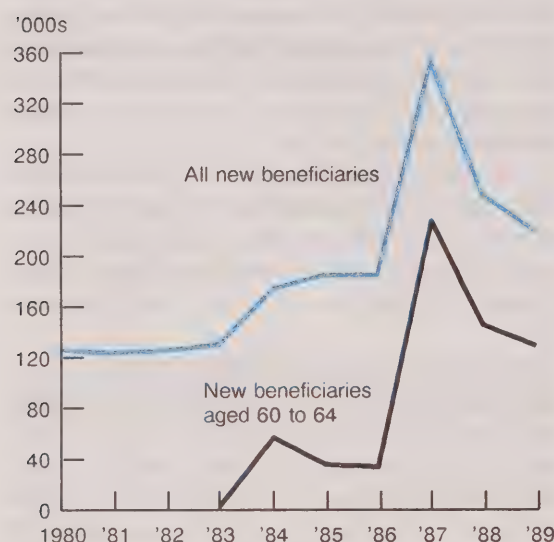
The Canada and Quebec Pension Plans may have been the greatest factors in the trend to early retirement in the last decade. Implemented in 1966, the maturing of these programs during the 1970s and 1980s produced generous pension equities for workers and the introduction of "flexible retirement" in 1984 (QPP) and 1987 (CPP) permitted access to these benefits as early as age 60.⁶ Full indexation of benefits was first introduced in 1974 and, after a phase-in period, full accrued benefits were first paid out in 1976. Worker response to this early retirement opportunity was dramatic. In 1984, three out of every four persons receiving QPP retirement pensions for the first time were between the ages of 60 and 64. Similarly, two-thirds of new CPP beneficiaries in 1987 were aged 60 to 64.

New opportunities in RPPs

In recent years greater retirement benefits from employer-sponsored pension plans (RPPs) have become payable to a larger number of workers at an earlier age. Not only has the rate of participation in these plans increased in the last 30 years, but the

New C/QPP retirement beneficiaries

The introduction of early-retirement opportunities in the Quebec Pension Plan in 1984 and the Canada Pension Plan in 1987 generated dramatic increases in the number of new applications for benefits.



Sources: Health and Welfare Canada and Régie des rentes du Québec

average rate of accrual of retirement benefits has also increased. Membership grew from about 19% of all Canadians 18 to 64 years of age in 1960 to 30% in 1980 and has remained at that level since (Table 1). Furthermore, regulatory pension legislation implemented during the 1960s and 1970s encouraged increased savings under RPPs through more stringent vesting requirements.⁷ Other RPP provisions, introduced by employers voluntarily or because of union pressures, resulted in improved benefits as well; for example, the increased incidence of indexation and the provision of a bridging benefit for workers retiring before age 65.⁸

Besides improvements in pension accrual opportunities, more liberal retirement provisions have been introduced in RPPs in the last two decades, granting participants earlier access to their pensions. Age 65 is most frequently stipulated in the plans as the normal retirement age. However, nearly all RPPs provide for early retirement, permitting employees to retire well before age 65, sometimes on a reduced pension, sometimes (after meeting certain minimum conditions) with a full accrued benefit.⁹

Table 1
Participants in the C/QPP, RPPs and RRSPs, selected years

Year	C/QPP participants		RPP participants		RRSP participants	
	Number	% of total population 18 to 64	Number	% of total population 18 to 64	Number	% of total population 18 to 70
	'000		'000		'000	
1960	...	...	1,815	19	..	..
1970	8,716	73	2,822	24	249	2
1980	10,943	74	4,475	30	1,916	12
1988	12,640	77	4,845	29	3,802	22

Sources: Intercensal population estimates, Pension Plans in Canada database, Revenue Canada-Taxation, Health and Welfare Canada and Régie des rentes du Québec

Note: Very few workers aged 65 and older contribute to the C/QPP and RPPs. RRSP contributions are permitted up to the end of the year the taxfiler reaches 71 years of age.

Since 1970 the availability of early retirement with and without reduction in benefits has increased. For example, the proportion of RPP members with an option to retire early on a reduced pension grew from 87% of the 2.8 million RPP members in 1970 to 98% of the 5 million members in 1989. Even more noteworthy, 77% of the 1989 members could choose such early retirement without employer approval, while only 35% of 1970 RPP members had this freedom. Early retirement without reduction in benefits was also much less available in 1970 than in 1989. While only 19% of the 1970 members were provided with this opportunity, in 1989 nearly 55% had this option.¹⁰

Dramatic growth in RRSPs

Participation in registered retirement savings plans and the amounts contributed to these plans have increased dramatically over the last 30 years. In 1970, 14 years after the introduction of RRSPs, only 2% of the population aged 18 to 70 contributed to these plans. By 1988, however, 22% of this group participated. At the same time, average contributions grew from \$900 per contributor in 1970 to nearly \$2,800 in 1988. These increases were partially the result of the periodic raising of the maximum contribution level, as well as the opportunity provided in the legislation to roll over certain lump-sum and periodic payments into RRSPs without paying income taxes on these amounts.¹¹

Sources of income of the older population

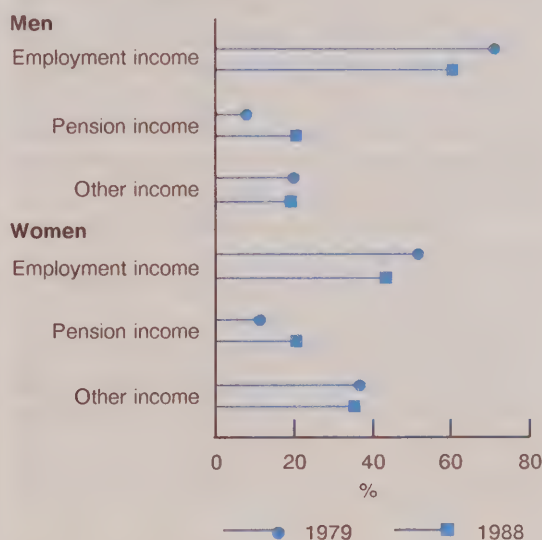
How many workers were able to take advantage of these retirement savings opportunities? Certainly not all. A large number had no opportunity to participate in RPPs or RRSPs and, for many, even C/QPP accruals were limited. For these workers,

insufficient income may have precluded retirement before age 65. There is evidence, however, that the availability of these programs did result in early retirement for an increasing number of workers, especially in the last 10 years.

Total assessed income (excluding capital gains) for the Canadian tax-filing population aged 55 to 64 increased from \$22.6 billion in 1979 to \$50 billion in 1988 (a growth of 121% in current dollars and 24% in constant dollars). Income from employment (both paid work and self-employment) remained by far the largest source in 1988 (67%), though it had decreased in relative importance. Aggregate pension income for this group increased from 6% of total assessed income in 1979 to 13% in 1988.

Sources of income for taxfilers aged 60 to 64

Reliance on employment earnings decreased during the 1980s, while pension income increased in importance.



Source: Revenue Canada-Taxation

Note: Other income includes unemployment insurance benefits, investment and rental income and other miscellaneous income, but excludes capital gains.

This increased reliance on pension income is most evident among men aged 60 to 64. The proportion of total income received from pension arrangements, both public and private, grew from 8% in 1979 to nearly 21% in 1988. Aggregate pension income was nearly six times greater in 1988 than in 1979, while employment income merely doubled over this period.

Prospects for the near future

There is no indication that the recent trend to earlier retirement will be reversed or even halted in the near future. C/QPP early retirement opportunities will remain attractive to many workers. Also, a number of developments in pension legislation, whose effects have not yet been felt, may contribute to the advancement of retirement.

RPP legislation

Recently implemented federal and provincial regulations prohibiting stringent eligibility requirements in employer-sponsored pension plans should generate increases in RPP participation.¹² Also, substantial growth in the accrual of pension benefits at both the individual and aggregate levels will become evident in the next few years as a result of strict vesting and locking-in requirements.¹³

Legislation mandating early retirement provisions has been extended to cover more and more RPPs in the last 5 years. The minimum legislative requirement, that is the opportunity to retire 10 years before the specified normal retirement age, was provided for in plans covering about 90% of all members by January 1, 1990. This provision will thus be available to a growing number of older workers.

New RRSP opportunities

New legislation, coming into effect in the 1991 tax year, increases the opportunity to

contribute to RRSPs for a large number of individuals. The ceilings on contributions have been lifted dramatically and a new seven-year carry-forward provision has been introduced. The latter will permit individuals to make up contribution opportunities missed during years of low income or unusual financial obligations.¹⁴

Conclusion

The observations presented in this article may imply that the trend towards early retirement in the last two decades reflects a conscious decision, on the part of many workers, to retire early. This is not the case. Retirement planning is far from universal (see Lowe, 1991). For many, early retirement may be the result of circumstances rather than a planned event. Many workers still enter into retirement with inadequate resources.

As the changing labour force participation rates indicate, more and more men aged 55 to 64 are leaving the paid work force. The tax data show that the incidence and amounts of payments from pension programs for both men and women in this age group have increased. These developments are to some degree a consequence of changing conditions in retirement programs, of increased opportunities for retirement savings and of the maturing of programs established years ago.

It is difficult to predict to what extent early retirement will be an issue in the years to come. The long-range view of an aging population and of a possible increase in labour demand may have a significant impact on retirement in the future.¹⁵ However, bearing in mind the responses to the early retirement opportunities introduced in the C/QPP and in RPPs in the 1980s, it can be safely assumed that the trend to early retirement will continue for some years. □

Notes

¹ In the December 6, 1990, judgement, The Hon. Mr. Justice G. La Forest noted that "estimates of workers who would voluntarily elect to work beyond the age of 65 vary from 0.1 to 0.4 per cent of the labour force" (*McKinney v. University of Guelph*, p. 67).

² This trend was observed in a study by E.B. Akyeamong published in *The labour force* (1987). A number of other studies (including L.S. Osberg, *Is it retirement or unemployment? Constrained labour supply and induced "retirement" among older workers* (1990)), have downgraded the importance of voluntary retirement as a cause for diminishing labour force participation. However, even if the incidence of voluntary retirement is inflated, its importance seems to have increased over the long term.

³ See B.D. McPherson, *Aging as a social process: an introduction to individual and population aging* (1983); A.L. Gustman and O.S. Mitchell, *National bureau of economic research* (1990); and "Retirement attitudes, plans and behaviour" by G.S. Lowe in this issue.

⁴ The other major retirement program in Canada, the Old Age Security/Guaranteed Income Supplement (OAS/GIS) system, is not relevant here, since its benefits are payable at age 65 only. For a detailed description of the retirement income system in Canada and definitions of the above program see "Women approaching retirement" by D. Galarneau in this issue.

⁵ Various incentives were used to encourage employees to retire early. For an example of such activity, consult L. Taylor, *Benefits Canada* (1990), on the staff reduction programs of eight Canadian companies in 1982 and 1983. It shows that one-third (more than 2,200) of the eligible employees in these companies took advantage of the incentives offered.

⁶ Contributors aged 60 to 64, who "have wholly or substantially ceased pensionable employment", can apply for and receive a retirement pension, reduced to take into account the earlier-than-age-65 start. A contributor is considered to have substantially ceased pensionable employment if his or her earnings (annualized) from employment or self-employment do not exceed the maximum retirement pension payable at age 65 for the year the pension is claimed (\$7,258 in 1991). The reduction is 0.5% for each month (6% per year) that the early retirement precedes the member's 65th birthday. (See Health and Welfare, *Overview: the income security programs of Health and Welfare Canada* (1990).)

The early retirement benefit may be beneficial to the member in the long term, particularly in the case of an earlier than normal death. The aggregate life-time benefits (fully indexed) might be greater with the early start. The worker's accrued pension, dependent on amounts contributed during the contributory period, will not be affected by the shortening of this period

through early retirement. Also, the pension accrual rate declines once the member becomes eligible for the early retirement benefit (age 60) and the expense of making contributions is avoided. There is a cost to continuing to work, which did not exist previously.

⁷ The term "vesting" traditionally referred to the employees' rights to employer contributions on termination of employment after a minimum period of participation in the RPP (possibly in conjunction with a minimum age). It also has come to infer that the vested benefits be used for future retirement income purposes only and that a minimum share of the accrued benefits be borne by the employer. The minimum legislative requirements have been made more and more stringent over the years. For further details see Statistics Canada, *Pension plans in Canada, 1988* (1990).

⁸ In 1970 only 7% of RPP members had some form of automatic indexing, usually limited to a maximum increase of 2% per year. By 1989 more than a third of the RPP members had such indexing and 35% of these individuals were in plans that provided for indexing based on the full upward movement of the Consumer Price Index. Many employers, without such automatic provisions in their RPP, provide ad hoc improvements to their retirees on a regular basis, either voluntarily or as a result of union-negotiated agreements. (See William M. Mercer Limited, *The Mercer bulletin* (1984 and 1988).)

An RPP bridging benefit provides workers, retiring before age 65, with a higher pension until they reach 65, after which a lower RPP benefit is compensated for by C/QPP and OAS benefits. The extent of this practice is not known. However, two-thirds of RPP members are in plans that have some form of C/QPP integration. For many of these plans a full benefit is provided for the retirement period before age 65 (for example, 2% of earnings for each year of service) with a reduced benefit coming into effect at age 65 (possibly 1.3% of C/QPP pensionable earnings and 2% on the balance of earnings for each year of service).

⁹ Most early retirement opportunities in RPPs require a reduction in the accrued benefit, either on an actuarial basis or by some fixed percentage, to compensate for the longer benefit period. In addition, some plans provide early retirement opportunities without reduction in the accrued benefit (also called special retirement provisions). This form of early retirement does entail some additional condition(s), such as a minimum number of years of service. For example, the employee must be at least 55 years old and have 30 years of service, or age plus service must equal at least 85.

The early retirement provision without reduction and even one with a reduction of less than the actuarial equivalent includes an implicit subsidy. Few workers are aware of this, however, and it can be assumed that the earlier access, not the increased value of aggregate

Notes – Concluded

benefits, provides the incentive to retire early. For further explanation of the disincentives to continue work after eligibility for early retirement, consult J.E. Pesando and M. Gunderson, *Retirement incentives contained in occupational pension plans and their implications for the mandatory retirement debate* (1987); or L.J. Kotlikoff and D.A. Wise, *The wage carrot and the pension stick: retirement benefits and labor force participation* (1989).

¹⁰ This increase in the right to early retirement is partially the result of changes in the regulatory pension legislation of the federal government and of some provinces in recent years. For further details see Statistics Canada, *Pension plans in Canada, 1988*, p. 43.

¹¹ Average contributions actually declined in constant dollars. A rationale for this is provided in "Women approaching retirement" by D. Galarneau in this issue. For further details on RRSPs, consult H. Frenken, *Perspectives on labour and income* (Winter 1990).

¹² By 1990 nearly 90% of RPPs were subject to legislation that prohibited stringent eligibility requirements for new employees. Since these former restrictions precluded the participation of many workers from their employers' RPP, their disallowance should increase membership.

¹³ By January 1, 1990, more than 70% of RPP members had full vesting after two years of participation in the RPP. Furthermore, benefits accrued after the effective date of the legislation could no longer be forfeited on termination of employment. These benefits now have to remain in the pension fund to provide for a deferred pension or they can be transferred into a locked-in RRSP. In the past, many workers reached retirement age with little or no pension accrual, despite membership in a number of RPPs during their careers.

¹⁴ Also, prior to 1989, RRSPs could not be converted into annuity income or registered retirement income funds until after the participant reached age 60. That restriction has been lifted and such payments from RRSPs can now start at any time. For a detailed explanation of the 1991 changes to the Income Tax Act and analysis of its effects on taxfilers, consult H. Frenken, *Perspectives on labour and income* (Winter 1990), pp. 16-17.

¹⁵ We may learn from the experience of developed countries that have an older population than Canada. Some countries – The United Kingdom, Sweden, Norway, Ireland – with low growth in their working-age populations are showing signs of a slowing down in the trend towards early retirement (see Organisation for Economic Co-operation and Development, *OECD employment outlook* (1990)).

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Women approaching retirement

Diane Galarneau

Elderly women have long been among the most disadvantaged members of Canadian society. Even in 1988 over one-third of women aged 65 and over were living alone and more than one-half of them had low income. Elderly women are heavily dependent on government transfer payments: in 1988 close to 40% of their total income was derived from the universal Old Age Security pension and the Guaranteed Income Supplement. Their average income was under \$13,000.

This bleak picture seems to have improved over time, however, at least for some elderly women. This improvement is mainly due to changes in pension legislation and the accumulation of personal assets. More substantial improvements may come about in the future as a result of the increased labour market participation of women over the last two decades.

This article attempts to determine whether it is reasonable to expect an improved situation for women who will retire in the future. It examines changes in the financial position of retired women in the 1978 to 1988 period and then reviews some aspects of the Canada and Quebec Pension Plans (C/QPP), employer-sponsored regis-

tered pension plans (RPPs) and registered retirement savings plans (RRSPs). In particular, it looks at changes to these plans between 1978 and 1988 and shows how these have altered the behaviour of and opportunities for women under 65 with regard to saving for retirement.

The current financial position of elderly women

Between 1978 and 1988 the average income of women aged 65 and over increased almost 27% in real (inflation adjusted) terms, about the same as the increase for men (26%). Although the position of all women relative to men improved only marginally – an elderly woman's income is still only about 60% of an elderly man's income – in 1988 a lower proportion of women's total income was derived from the Old Age Security (OAS) and Guaranteed Income Supplement (GIS) programs, while a higher proportion was attributable to the C/QPP (Table 1). These developments indicate an improvement because C/QPP benefits are linked to past labour market participation. However, in 1988 about 32% of the benefits paid out under these plans were awarded to surviving spouses. Therefore, a number of women (aged 65 and over) obtained retirement benefits as a result of being widowed as opposed to having once participated in the labour force.

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The Canadian retirement income system

The Canadian retirement income system is three-tiered:

- (1) The first tier consists of the Old Age Security program (OAS) and provincial income supplement programs. The OAS program consists of the Old Age Security pension, the Guaranteed Income Supplement (GIS) and the Spouse's Allowance (SA). The OAS pension is a basic monthly benefit payable, upon application, to anyone aged 65 or older who meets residency requirements. The GIS is a monthly benefit paid to recipients of the basic OAS pension who have little or no income, while the SA is disbursed to spouses aged 60 to 64 of OAS pensioners or to widows and widowers (60 to 64) whose family income does not exceed a certain limit. These plans are not linked to labour market participation in any way.
- (2) The second tier covers plans linked to labour market participation such as the Canada and Quebec Pension Plans (C/QPP). These are contributory social insurance plans based on earnings. A contributor must be a salaried or self-employed worker, aged 18 to 70 years, and have annual earnings exceeding a minimum threshold, which is adjusted each year.
- (3) Other savings of all kinds constitute the third tier, for example, employer-sponsored pension plans (RPPs) and registered retirement savings plans (RRSPs), both of which provide members with tax advantages.

This article concentrates on tiers 2 and 3.

Pension income from RPPs, RRSPs and all other types of pensions now also accounts for a larger proportion of women's total income (up from 8.4% in 1978 to 11.6% in 1988).

This real growth in the income of elderly women is attributable to certain changes in pension legislation¹ combined with a steady increase in the individual accumulation of retirement savings.

The extent to which the income of the elderly has improved is further indicated in the proportion of seniors who receive the Guaranteed Income Supplement (GIS). This supplement is paid to elderly persons with low incomes and serves as a form of social assistance. GIS benefits are limited by an income threshold² set by the government.

The proportion of female GIS recipients fell more than 5 percentage points between 1978 and 1988 (Table 2). Although the proportion receiving partial benefits rose marginally over the decade, the proportion of those who received full benefits fell by 50%.

Finally, the proportion of female C/QPP beneficiaries rose significantly between 1978 and 1988 (from 22% to 45%),

Table 1
Average income and sources of income of persons aged 65 and over, 1978 and 1988

	Women		Men	
	1978	1988	1978	1988
Average income (1988 dollars)	10,200	12,900	17,400	21,800
% of income derived from:				
OAS*	36.2	29.1	20.8	17.2
GIS	11.0	10.9	5.6	5.3
C/QPP**	4.3	10.5	8.5	15.9
Subtotal (government plans)	51.6	50.4	34.9	38.3
Investment income	32.6	31.4	25.4	21.9
Employment income	5.3	4.2	19.5	14.0
Pension income†	8.4	11.6	16.7	23.1
Other income	2.1	2.4	3.5	2.7
Total	100.0	100.0	100.0	100.0

Sources: Revenue Canada-Taxation, Health and Welfare Canada

* The data on the OAS and GIS were obtained from Health and Welfare Canada.

** Includes benefits paid to surviving spouses.

† For the purposes of this table, 1988 pension income includes income from RPPs, RRSPs and other pension income. In 1978, part of RRSP income was included in the category "Other income".

mainly because of the growth in the labour force participation rate of women.³

Table 2
Female beneficiaries of government pension plans and taxfilers as a percentage of all women aged 65 and over, 1978-1988

Plan	1978	1988
	%	
OAS	97.0	98.3
GIS total	55.4	50.0
Full benefit	20.5	10.4
Partial benefit	35.0	39.6
C/QPP	21.5	45.0
Taxfilers	57.8	65.9

Sources: Revenue Canada-Taxation, Health and Welfare Canada and unpublished data supplied by Demography Division.

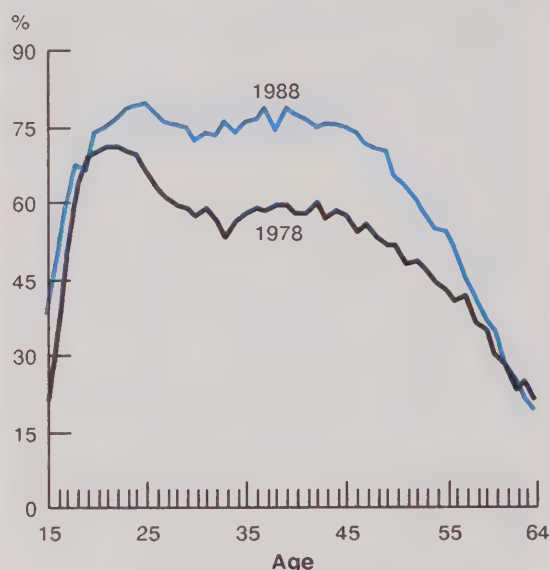
Increased participation in the labour market

The main development which indicates that the position of elderly women will be different in the future is the increased participation rate of women. Between 1978 and 1988, the rate climbed from 54% to 67% for women between the ages of 15 and 64, while it remained steady (around 85%) for men in this age group. Furthermore, if we take into account all women who were in the labour force at some time in 1988, their participation rate climbs to 76%.⁴

During the period under study, the participation rates by age rose for the majority of women, although the largest increases were for women aged 30 to 50. In both 1978 and 1988, the participation rates began to decline around age 45. These women were more likely to have opted for a more traditional lifestyle by remaining on the margins of the labour force. This tendency is even more pronounced among women aged 55 to 64 who exhibit a much

Women's participation rates by age

Labour market participation allows women greater access to retirement income programs.



Source: Labour Force Survey

weaker participation in the labour market, although early retirement could also be a factor.

The increased participation of women in the labour market has resulted in their increased membership in government pension plans (C/QPP) and private pension plans (RPPs, RRSPs).

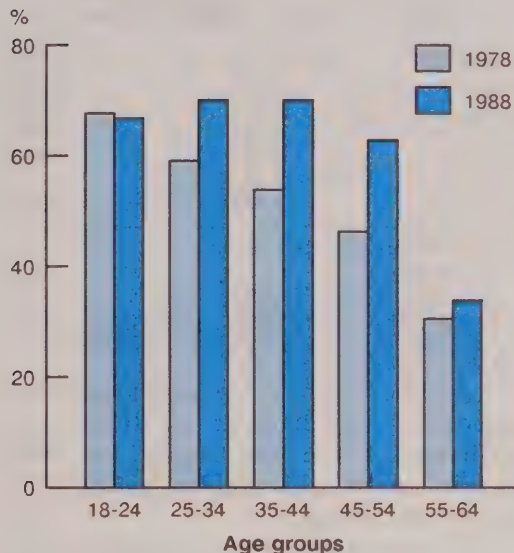
Participation in C/QPP

The participation rate of women in the C/QPP rose by 10 percentage points between 1978 and 1988 (from 53% to 63%). The increased rate of participation in these plans reflects the higher labour force participation of women aged 25 to 54.

In 1987 a number of changes were made to the C/QPP. In that year it became permissible for spouses to share C/QPP pension credits, even if only one spouse had

Women's C/QPP participation rates

A larger share of women aged 25 to 54 are now contributors to the C/QPP because of their higher participation in the labour market.



Sources: Revenue Canada-Taxation and unpublished data supplied by Demography Division

contributed to the plan. This assignment of retirement pensions, permitted only if both spouses are at least 60 years old, can be used for income averaging between the spouses to produce a tax advantage.

Pension sharing is also possible in cases of divorce or separation that occurred after January 1987, with the duration of the relationship being a factor. Before 1987 different rules applied and sharing was not always mandatory. Even though the new rules have had considerable impact (in 1988, 8,074 applications for the division of pension credits were approved; in 1978 the total was 610), the proportion of women applying for this credit remains low (10% of all divorced women in 1988), possibly because this right is unknown to many people.⁵ The new rules

also allow for a survivor's benefit to continue if the survivor remarries.

Changes were also made to the C/QPP contribution period. The contribution period is used in calculating the average earnings on which benefit amounts are based upon retirement. A defined number of years of participation could already be excluded from the calculation of average earnings (up to 15% of the contribution period), in order to avoid penalizing beneficiaries for periods of unemployment, illness or education, when income falls or disappears altogether. A provision introduced in 1978 also enables the years devoted to the care of children under the age of seven to be excluded from the credited earning period.⁶

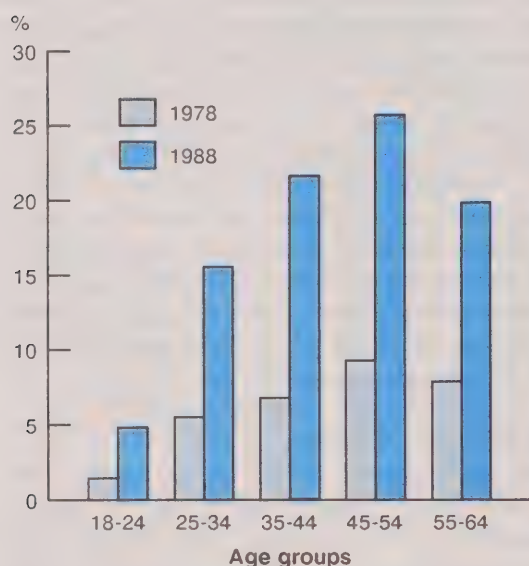
RRSP participation

In 1978, female RRSP contributors were uncommon, as barely 6% of all women who completed an income tax return had contributed. By 1988, women's RRSP participation rate had almost tripled (to 17%). The proportion of women contributors rises with age (up to 54 years) as retirement approaches. However, the RRSP participation rate of 55 to 64 year-old women is weaker, possibly because they do not have much income at their disposal; that is, because they participate in the labour force to a lesser degree, their financial resources are apt to be more limited. It is equally possible that some of these women have already retired and prefer putting their money to use in ways other than investing in RRSPs.

The decision to participate in an RRSP and the amount involved are frequently determined jointly between the spouses and often depend on family income. However, the fact that both the participation and the amount contributed increase with the rise in women's incomes suggests that RRSP participation is also dependent on a woman's own income.

Women's RRSP participation rates

The rate of RRSP participation has more than tripled from 1978 to 1988.



Sources: Revenue Canada-Taxation and unpublished data supplied by Demography Division

In addition, not only are women's RRSP accruals frequently increased by their own contributions, they are also augmented by spousal contributions. In 1988 spousal contributions amounted to \$328 million; in 98% of these cases they represented contributions made by husbands which had been deposited in their wives' accounts.

Between 1978 and 1988 the average annual contribution⁷ dropped, largely because of the decrease in real terms of the RRSP contribution limit set by Revenue Canada. Whereas the 1978 tax-deductible RRSP contribution limit was \$5,500 for taxpayers not contributing to an RPP, by 1988 it had risen to \$7,500.⁸ However, to compensate for the effects of inflation over this period, the 1988 figure should actually have been approximately \$11,000. Similarly,

Table 3
Average annual RRSP contributions by women, 1978 and 1988

Age group	1978	1988
Average contributions (1988 dollars)		
Less than 25	1,633	911
25-34	2,098	1,267
35-44	2,581	1,368
45-54	2,847	1,695
55-64	3,091	1,911
Less than 65	2,585	1,504

Source: Revenue Canada-Taxation

the \$3,500 limit for RPP participants should have been close to \$7,000.

Another factor is the interdependence of members' contributions to RRSPs and contributory RPPs: the higher the RPP contribution, the lower the maximum RRSP contribution allowed.

In spite of the drop in contributions in real terms (Table 3), the fact that the participation rate climbed in such spectacular fashion remains significant. However, these data represent only the annual contribution level and mask the accumulation of principal and interest as well as the number of former contributors who did not make any contributions during the years under study.

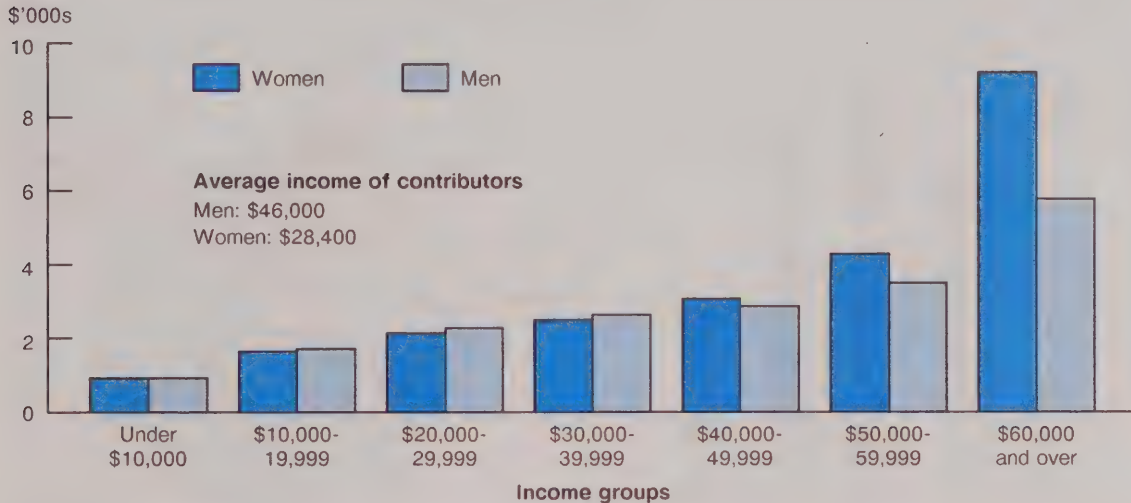
Furthermore, the rules on RRSP contributions are to be changed this year. These changes will allow many taxpayers to increase their annual RRSP contributions.⁹

RPP participation

Between 1978 and 1988 the rate of RPP participation of all women aged 18 to 64 grew more than 4 percentage points, to reach 21%. By comparison, the rate for men dropped 4 percentage points over this same period, to 37% in 1988. The strongest increases were observed among 35 to 54 year-old women.

Average contributions of RRSP participants, 1988

The average contributions of women to RRSPs rise with income.



Source: Revenue Canada-Taxation

RPP benefit formulae

There are two types of registered pension plans: defined contribution plans and defined benefit plans. In the first instance, the retirement pension depends on the contribution level and the investment performance of the accumulated assets. In the second instance, it depends on the plan's benefit formula: only employer contributions are adjusted from time to time on the basis of actuarial evaluations. Some participants belong to plans that combine the two formulae.

In both 1978 and 1988 over 90% of RPP participants belonged to defined benefit plans. To determine whether female participants in such plans will be in an improved position upon retirement, it is more useful to examine changes in benefit formulae and overall plan conditions than the size of the annual contributions.

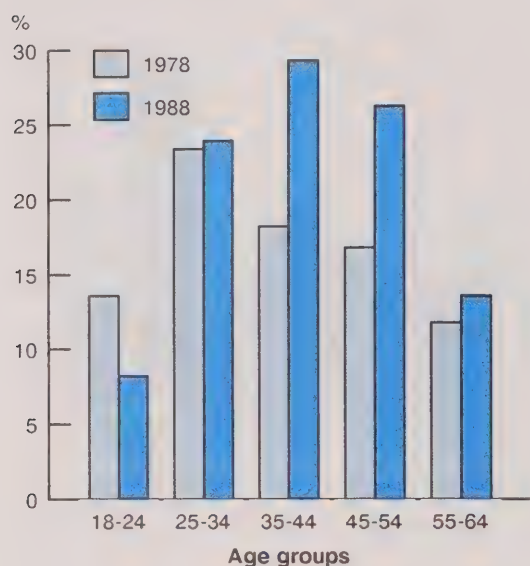
Between 1978 and 1988 there were no real improvements in benefit formulae for plans based on a percentage of earnings.¹⁰ The most common formula remains the one based on final earnings.¹¹ This formula covered about three-quarters of female participants in both 1978 and 1988. The most common rate has been 2% of final earnings per year of participation.¹²

Limitations of RPP contribution data

Revenue Canada supplies data on the number of employees who contribute to registered pension plans (RPPs). However, it is not possible to determine the total number of RPP participants using these data, as they do not include participants in non-contributory plans (where all the contributions are made by the employer). The RPP membership rate found in this article takes into account RPP participants in non-contributory plans. The data from non-contributory plans were obtained from the Survey on Pension Plans in Canada. These data have been combined with Revenue Canada data by assuming the same age distribution observed for participants in contributory plans.

Women's RPP participation rates

The participation rate increased more than four percentage points between 1978 and 1988.



Sources: Revenue Canada-Taxation, Survey on Pension Plans in Canada and unpublished data supplied by Demography Division

Improvements to flat benefit plan formulae were also observed. In 1988, 74% of female participants belonged to plans that guaranteed monthly benefits of more than \$7 per year of service, compared with 35% in 1978.

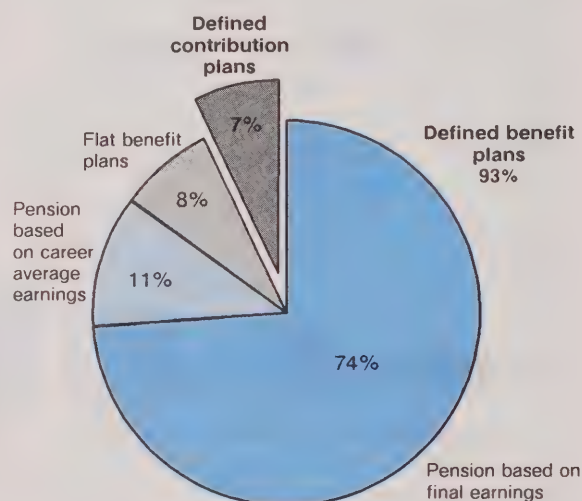
For defined contribution plans, it is impossible to determine the accumulated pension since the total annual contribution per participant as well as the return on investments are unknown. In 1988 female participants in these plans accounted for only 7% of all female RPP participants.

Changes to RPP legislation

In 1988 the federal government and most provinces had legislation governing RPPs. British Columbia and Prince Edward Island,

RPP participants by type of plan, 1988

Most women participating in RPPs belong to defined benefit plans.



Source: Survey on Pension Plans in Canada

the only two exceptions, are currently in the process of adopting similar legislation. Some pension plans are not governed by the same rules as other RPPs, but by legislation specific to them. The federal government superannuation plan and some provincial government plans fall into this category.

Many changes in legislation have been contemplated recently. Some are already in force, while other changes are expected in the next few years. This article focuses on the changes likely to affect women.

RPP eligibility

In most provinces, the rules governing RPP eligibility have been amended. Under the current rules, if an employer offers a pension plan, an employee with two years of

Changes in RPP legislation likely to affect women

Provision	1978	1988
Eligibility	No legislative requirement	Full-time employees after two years of service; eligibility of part-time employees
Survivor benefits	No legislative requirement	Normal form of pension for most participants
Vesting and locking-in requirements	Age 45 and 10 years of service in most cases	2 to 5 years of service in most cases
Commutated value of pension	No legislative requirement	50% of commuted value of pension must be provided by the employer

Effects of changes in legislation

	1978	1988	1993 *
Eligibility			
% of women participating in an RPP that requires two years or less of service to be eligible for membership	56**	67 †	99
Surviving spousal benefit			
% of men participating in an RPP with a spousal benefit as the normal form of pension	0††	77 †	93
Vesting of employer contributions			
% of women participating in an RPP with vesting and locking-in of contributions:			
within five years	19	62	65
after five years or more	61	34	..
under other conditions	6	5	..
% of women participating in an RPP with no claim on employer contributions	14	0	..

Source: Survey on Pension Plans in Canada

* These projections are based on legislation in force January 1, 1988, and legislation coming into force by 1993.

** In 1978 this requirement was often combined with one on age; by 1988 this practice was much less common since it contravened legislation abolishing age discrimination.

† These data represent the number of female participants subject to minimum conditions under the new requirements; they could include members with even better conditions.

†† This figure (0%) means that there were no legal requirements regarding spousal benefits in 1978. Nevertheless, this did not prevent 45% of male workers from having spousal benefits in their RPPs.

continuous service with that employer must be allowed to participate. In 1988 this rule applied to 67% of female participants. Female participants in Quebec became subject to the rule in 1989 and those in Prince Edward Island will be subject to it in the near future. In 1993 they are to be followed by participants in British Columbia, which will bring the proportion of female participants up to approximately 99%.¹³ This rule benefits persons who are employed sporadically, a situation true for many women, and persons who change jobs frequently.

Furthermore, for an increasing proportion of female participants, RPP membership is immediate and automatic (from 32% in 1978 to 37% in 1988).

In most provinces, an employer who provides an RPP is now required to allow part-time employees to participate in the plan. The extent to which this measure will affect women is not yet known. Since most part-time employees are women, the measure should have its greatest impact on them, but because pension benefits are often based on earnings, the accumulated pension of part-time workers may be small.

Survivor's benefit

According to new legislation adopted by the federal government and the Nova Scotia, Ontario, Manitoba, Saskatchewan and Alberta governments, RPPs must now provide a survivor's benefit as a normal form of pension. All the other provinces, with the exception of Newfoundland, will soon follow suit. Strictly speaking, the availability of a survivor benefit results in a reduction in the monthly pension benefits of a participant, unless the employer has provided otherwise. It is also possible to opt out of this rule, subject to the agreement of both spouses.

Some plans provide a pension to a surviving spouse with no reduction in the participant's own pension during his or her

retirement years. In 1988, 46% of male participants belonged to plans with this type of clause, compared with 44% in 1978.

Vesting of employer contributions

When an RPP participant leaves a job prior to the planned age of retirement, some provisions are made for reimbursement of the pension accumulated under the RPP. The provisions include the employee's right to the employer's share and the form in which the accumulated pension is paid. In the past, many employees lost the employer's share of contributions on leaving a job before the retirement age. Around the mid-1960s, a number of provinces adopted regulations allowing the employee access to the employer's share of contributions. Certain requirements were attached: in most cases, the employee had to be at least 45 years old and have worked at least 10 continuous years for that employer. The new provisions also specified that the accumulated pension was to be locked in and paid as a deferred pension at retirement.

Recently adopted rules specify a far shorter period of service for vesting purposes. The period ranges from two to five years, depending on the province. Furthermore, 50% of the commuted value of the accumulated pension must be provided by the employer.

In 1988, as a result of the new provisions, 62% of female participants were entitled to the contributions made by their employers within five years of continuous service, compared with only 19% in 1978.

Pension indexing

Pension indexing is another change to the laws governing RPPs. Ontario and Nova Scotia are the only provinces to have introduced legislation to this effect. Most plans that provide pension indexing are in the public sector and, as a large number of women (57%) work in this sector, a large

proportion of them receive indexed pensions.¹⁴ Because most benefit formulae are based on final earnings, the erosion of pensions by inflation is reduced.

Other changes in legislation

Other changes,¹⁵ not necessarily included in pension legislation, hold further promise of improvement in the position of retired women. One example is the introduction of new options regarding retirement age. These could enable an individual who wishes to extend his or her career, or is obliged by circumstances to do so, to add to retirement income.¹⁶

Another factor which may have an impact on the income of retired women is that many Canadian provinces are now (or will be) implementing pay equity legislation. Since women often earn less than men and pensions are often based on employment income, many women continue to find themselves disadvantaged financially after retirement compared with men.

Furthermore, marriage and common-law relationships are increasingly considered to be partnerships in which earned income is divided equitably.¹⁷ Traditionally, many retired women, as a result of the dissolution of their marriages, have found themselves in very precarious financial circumstances because they had relied on the financial support of their husbands upon retirement. This scenario may change, however. Those who stand to benefit the most by it will be women who have devoted the major parts of their lives to their families and in doing so have not accumulated sufficient funds for retirement.

In addition to the maximum spousal RRSP contributions permitted since 1974, Revenue Canada is allowing, from 1989 to 1994, a spouse to transfer up to \$6,000 of pension income annually from an RPP or deferred profit sharing plan (DPSP) to his or her spouse's RRSP; in most cases it is a

Provincial programs

In addition to the federal government plans, some provinces also provide supplements to needy elderly individuals. Nova Scotia, Ontario, Manitoba, Saskatchewan, Alberta, British Columbia and the Yukon all offer this type of non-taxable supplement. Most of the programs were set up in the early 1970s. They are paid in addition to the OAS, GIS and Spouse's Allowance to beneficiaries who meet defined income criteria, which are not necessarily those associated with federal programs.

Other supplements are also provided in the form of exemptions from real estate and/or school taxes or direct housing subsidies. Most of these programs were established around 1980. It is difficult to assess the extent to which women have benefited from these measures but, as they are designed for low-income individuals, it is reasonable to assume that many women have benefited from them.

husband who transfers funds to his wife's RRSP. The impact of this new rule is considerable: between 1988 and 1989 contributions to spousal RRSPs climbed from \$328 million to \$472 million, an increase of 44%. Although it ends in 1994, this rule will have allowed some women to increase their accumulated reserves in these plans.

Summary

The financial position of women at the time of retirement seems to be improving with time. But, it is unlikely that all groups of women will benefit equally from these improvements.

Although their number has declined, there are still women who have remained outside the labour market most of their lives. Some of them may eventually find themselves facing the same financial difficulties seen today among elderly women, in spite of the new legislation and regulations related to government programs. Others will have worked mostly part time or sporadically. It is possible that these women will be unable to accumulate sufficient amounts of retirement savings because their incomes will only allow them to afford essentials.

Changes in legislation alone cannot guarantee all women a comfortable retire-

ment. The women who will be in the best position will probably be those who were able to accumulate personal financial reserves, with the aid of well-paid jobs with generous benefits.

Nonetheless, important changes have occurred that have altered the financial situation of women. Those who are currently retired have already benefited from gains in

their real income. The main factors underlying this improvement are the many changes to pension legislation and an increased labour force participation. This increased participation has, in turn, led to a much greater membership in the C/QPP, RRSPs and RPPs, thus assuring women a more secure future. □

Notes

¹ These changes include a \$50 increase in monthly GIS benefits in 1984.

² This threshold is adjusted every quarter according to the increase in the Consumer Price Index. In the first quarter of 1991, it was set at \$10,128 for single retired persons and \$13,200 for retired couples.

³ Because these data were provided by Revenue Canada, part of the increase is attributable to the fact that the number of persons aged 65 and over filing income tax returns has risen. (Between 1978 and 1988, the proportion of women aged 65 and over who were taxfilers rose from 58% to 66%.) To ensure that OAS data do not reflect the growth in the number of taxfilers and since GIS benefits are not taxable (and therefore do not appear in tax data), Health and Welfare Canada data were used.

⁴ These data originate from the Labour Market Activity Survey (1988).

⁵ For more information on this topic, see C. Schmitz, *The lawyers weekly* (March 1991).

⁶ One important aspect of the C/QPP is the fact that the benefits are fully indexed to reflect CPI increases since 1974. For further information on these plans see *Overview: the income security programs of Health and Welfare Canada* (1990).

⁷ The comparison of average annual contributions may be deceiving: because no statistics are available on the total accumulation of contributions by individual participants over the years, only the annual contribution level may be observed.

⁸ This maximum came into force in 1986.

⁹ One change is a gradual increase in the RRSP tax deductible contribution limit, up to a maximum of \$15,500 in 1995. The rules are designed for greater fairness, in that RRSP-related tax deductions will take into account (where applicable) the employer's contributions to the employee's RPP. Unused amounts may be deferred from one year to future years for tax

purposes. For further information on these changes and for a more detailed analysis of all RRSP participants, see H. Frenken, *Perspectives on labour and income* (Winter 1990).

¹⁰ The benefit formulae of defined benefit plans vary. Most formulae calculate benefits as a percentage of earnings (unit benefits) and a small number pay a defined amount (flat benefit) per year of employment.

¹¹ In unit benefit plans, the earnings base used in benefit calculation is final average earnings (that is, the employee's average earnings over the years immediately prior to retirement); other plans use career average earnings. Obviously the final average earnings base, generally the highest, is the most advantageous.

¹² However, since many benefit formulae are based on final earnings and earnings generally increase over time, the formula in a sense provides a benefit increase.

The following example relates to a pension based on 2% of the average annual earnings of the last five years of employment (for example, \$60,000) for an individual having participated in an RPP for 35 years: $\$60,000 \times 35 \times 0.02 = \$42,000$ annually or \$3,500 monthly.

¹³ Included are female participants for whom eligibility requirements are to be more advantageous (two years of service is the minimum condition). In 1978 there was a broad range of eligibility requirements. About 56% of participants were required to accumulate at least two years of service to become eligible, but this requirement was often coupled with others such as age.

¹⁴ See "Retirement attitudes, plans and behaviour" by G. S. Lowe in this issue.

¹⁵ Among these changes is the extension, in 1985, of the Spouse's Allowance Program to include widows aged 60 to 64. Prior to that year, if a woman were to receive the Spouse's Allowance, her spouse had to be alive and receiving the GIS. If a woman was receiving the Allowance and her husband died in the interim (that is, before she reached age 65), she lost the Spouse's Allowance. Since 1985 this is no longer the case.

Notes – Concluded

¹⁶ Although this possibility exists, there is currently a trend in Canada towards early retirement. See "The pension carrot: Incentives to early retirement" by H. Frenken in this issue.

¹⁷ An example of this trend is reflected in Quebec's Family Patrimony Law (Bill 146) which stipulates rules regarding the division of goods acquired during a marriage or common-law relationship, taking into account the monetary and other contributions of each spouse.

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Are jobs in large firms better jobs?

René Morissette

In recent years there has been a growing interest in small firms. Many studies¹ have shown that small firms are responsible for a substantial portion of the jobs newly created in Canada over the last decade. But, if one measures "job quality" in terms of unionization, pension plan coverage, susceptibility to layoffs, and especially wages, are jobs in small firms better than those in large firms?

This article examines the distribution of employment across firm sizes and shows that jobs in larger firms are more likely to be unionized, more likely to be covered by pension plans, less likely to be terminated by a permanent layoff, and pay higher wages on average. It might be assumed that the higher wages paid in large firms merely reflect worker differences in education, sex and work experience. But, results show that wage differentials persist even after accounting for variations in these personal characteristics.

The fact that large firms pay higher wages has an interesting implication. It suggests that wage differentials among Canadian workers may result not only from differences in education, sex and work experience, but also from factors unrelated to worker attributes. In other words, of two

workers with the same education and seniority, one may be receiving a higher wage simply because he or she was fortunate enough to be hired by a large firm.²

Employment distribution and firm size

In this study, small firms are defined as those having fewer than 20 employees, large firms as having 500 employees or more and medium firms as having between 20 and 499 employees.

Small firms are far from being a negligible part of employment – they account for roughly 25% of hours worked in full-time jobs³ (see *A few words about the data*). While jobs in small firms are predominant in construction and consumer services, they are much less prominent in forestry and mining, manufacturing, and distributive services.⁴ In these last three industrial groups as well as in business services, large firms are the principal source of employment.

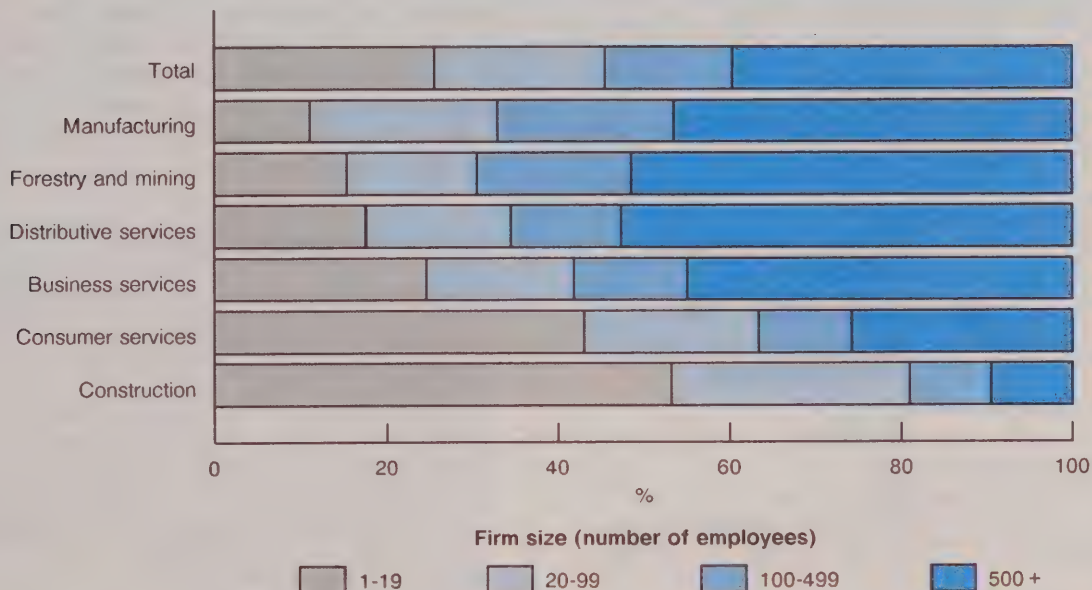
Comparing jobs across firm sizes

To fully compare jobs across firm sizes various aspects of the jobs must be considered: working conditions, fringe benefits, the extent to which the jobs are unionized, the extent to which they are covered by a pension plan, the chances of being laid off, and wages. Since the data sources used here do not contain information

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Employment by firm size and major industrial groups,* 1986

Small firms account for over 25% of total employment.



Source: Labour Market Activity Survey

* The percentages refer to hours worked in firms of a given size divided by total hours worked.

on working conditions or fringe benefits, the focus is on the latter four aspects.

Jobs in large firms are ...

... more likely to be unionized

The larger the firm, the more likely the jobs are to be unionized. Jobs in large firms are almost five times more likely to be unionized than those in small firms. The unionization rate increases with firm size for almost all sectors.

Differences in unionization rates between large and small firms vary widely across industries. In distributive services jobs in large firms are seven times more likely to be unionized than those in small firms; in consumer services they are eight times more likely to be unionized. On the

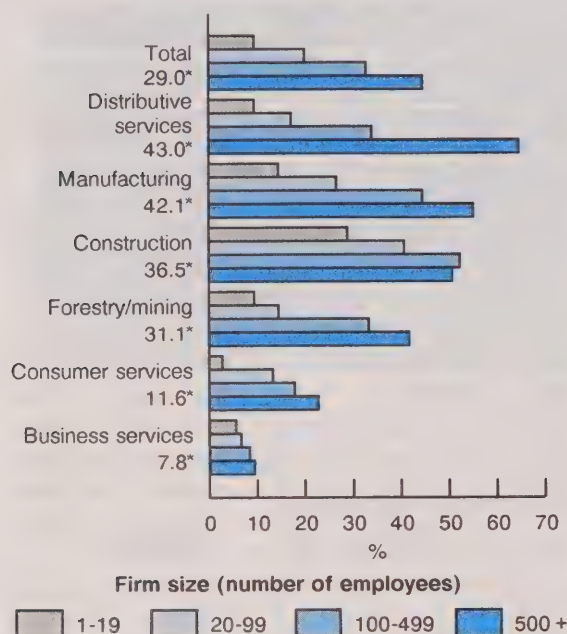
other hand, in construction and business services, jobs are only twice as likely to be unionized. In construction, union membership is high in small firms. In business services, the predominance of white-collar workers (clerks, engineers, architects, accountants, and lawyers) probably accounts for the low unionization rates observed in both large and small firms.⁵

... more likely to be covered by pension plans

Firm size is a key determinant of pension plan coverage. An hour worked in a large firm is, on average, more than five times more likely to be covered by a pension plan than in a small firm. This ratio is much higher in non-unionized jobs (more than 7) than in unionized jobs (less than 2).⁶ In fact,

Unionization by industry and firm size,** 1986

In larger firms, unionized workers represent a larger share of total employment.



Source: Labour Market Activity Survey

* Percentage over firms of all sizes

** The extent of unionization is measured by the proportion of total hours worked by unionized workers.

disparities in pension plan coverage, whether measured in absolute or relative terms, are much smaller in unionized than in non-unionized jobs. Therefore, unionization not only increases the chances of being covered by a pension plan,⁷ but it also reduces the gap in pension plan coverage between large and small firms.⁸

... less subject to permanent layoff

The chances of a worker being permanently laid off depend on many factors. Workers employed in industries for which product demand is volatile are more subject to job loss. In addition, older workers are less likely to be laid off because of seniority

provisions included in collective agreements. Workers receiving high wages may also be less affected by layoffs because firms may have invested a substantial amount of money in employee training. Picot and Baldwin (1990) have shown that the chances of a worker being permanently laid off decrease as firm size increases, even after accounting for differences in industry, age of workers and wages. For instance, a worker

A few words about the data

The 1986 Labour Market Activity Survey (LMAS) provides information on the number of jobs held by a representative sample of individuals in 1986 as well as on the number of hours worked within each job. The distribution of employment across firm sizes may be based on persons employed, jobs, or hours worked. Since the data refer to employment throughout the entire year, neither persons employed nor jobs is totally satisfactory. The problem is that a person employed in a job held for one month receives the same weight as a person employed in a job held for the whole year. Looking at the distribution of hours worked, which amounts to weighting each job by the number of hours worked, overcomes this problem. Therefore, in this study, employment in firms of a given size is defined as the total number of hours worked during the year.

The sample used is restricted to hours worked by full-time paid workers in all industries except agriculture, fishing, and public services. The sample contains 24,297 full-time jobs.

Company size can be measured at the establishment level or at the firm level. In the LMAS, establishment size is measured by asking workers the following question:

Q1: "About how many persons were employed at the location where [you] worked for this employer?"

The firm is defined as the set of establishments owned by the employer in Canada. The firm size is measured by asking workers the following two questions:

Q2: "Did this employer operate at more than one location in Canada?"

Q3: "In total about how many persons were employed at all locations in Canada in 1986?"

The figures presented in this study are for firms, rather than establishments. However, similar results are obtained for establishments.



PERSPECTIVES

ON LABOUR AND INCOME

Supplement

Catalogue 75-001E

Autumn 1991

The labour market: Mid-year review



H I G H L I G H T S

- After four quarters of continuous economic decline, several major economic indicators posted some positive signs in the second quarter of 1991. But labour market indicators in that same quarter exhibited mixed signals. For example, an increase in employment in April and May was followed by a decline in June.
- The number employed at mid-1991 was 89,000 lower than at the end of 1990. Part-time employment rose but full-time employment declined during the period. Youth employment dropped (-115,000), while adult employment actually increased slightly (26,000).
- Employment gains and losses were not evenly distributed among the provinces during the recession. Ontario sustained the largest losses, accounting for about three-quarters of the nation's total employment decline in the one-year period ending March 1991. In contrast, Alberta and British Columbia registered gains in the same period. Employment increased in all of the western provinces during the second quarter of 1991.
- The goods-producing sector, which was hardest hit with job losses (notably in manufacturing and construction), began to exhibit signs of improvement in the second quarter of 1991. However, transportation, communication and other utilities, as well as trade continued to show weaknesses.
- The highest number of unemployed recorded so far in this recession was 1,453,000 in June 1991, only 86,000 lower than the December 1982 peak of 1,539,000, reached in the 1981-82 recession. But the corresponding unemployment rate in this recession was much lower (10.5% compared with 12.8%).
- The annual increase in the Consumer Price Index (6.4%) during the first quarter of 1991 was greater than the corresponding rise in average weekly earnings (5.6%). During the three preceding quarters, wage gains had exceeded price increases.

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The labour market: Mid-year review

Tim Thompson

During the first half of 1991, economic and labour market observers were anxiously looking for signs of the recession ending and recovery beginning. But it wasn't until the second quarter that several major economic indicators began to improve. For example, gross domestic product was up in April, as were manufacturing shipments. Furthermore, the composite leading economic indicator, a barometer of the general direction of the economy in the months ahead, posted its first positive sign in 15 months in April. Bankruptcy figures also eased slightly in May after posting a large increase in April. In the labour market, however, the signs of a turnaround were mixed. Employment in the second quarter showed an improvement over that in the preceding quarter, the first increase in four quarters. But this had the effect of drawing many more jobless people into the labour force. The result was a further deterioration in unemployment.

Employment bottomed out in the first quarter of 1991

Between the end of 1990 and June 1991, employment declined by 89,000. Most of the job losses, however, occurred during the first two months of this year. Indeed, the largest

This article is based on information available as of July 5, 1991. Unless otherwise stated, all monthly data have been seasonally adjusted to provide a better picture of underlying trends. Seasonal movements are those caused by regular annual events such as climate, holidays, vacation periods, and cycles related to crops and production. Seasonally adjusted series still contain irregular and longer-term cyclical fluctuations.

monthly drop in employment during the 1990-91 recession was recorded in January (-90,000) and was followed by another large decline in February (-61,000). Increases were recorded during the next three months, but the first half of 1991 ended with a slight employment decline in June (-13,000).

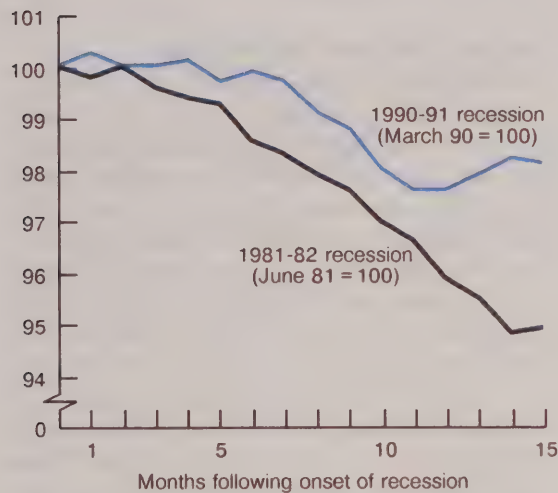
Partly because of their low seniority, youths usually experience greater employment losses than adults during recessionary periods. Not surprisingly, job losses hit youths more severely than adults during the early half of 1991. Youth employment declined in each of the first six months of 1991. The youth employment level of 2,070,000 in June 1991 was 115,000 lower than at the end of 1990. In contrast, adult employment fell only during January and February. Since then monthly increases have been registered, and the June level of 10,281,000 was 26,000 higher than at the end of 1990.

Employment losses so far this year have been concentrated among men. The figure in June 1991 was 94,000 below the December 1990 level. This reflects the much greater proportion of men working in the

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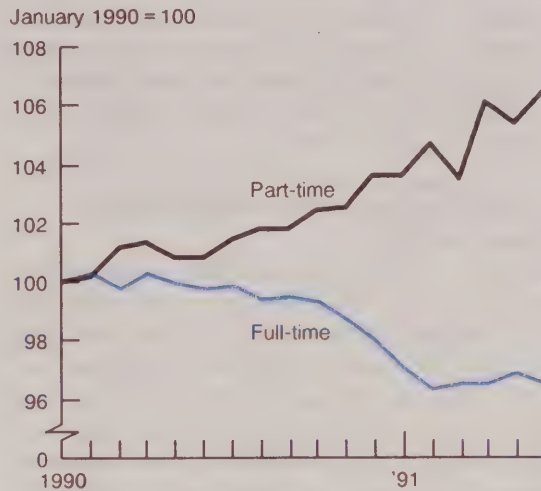
Index of employment

Compared with the 1981-82 recession, employment losses have been smaller in this downturn.



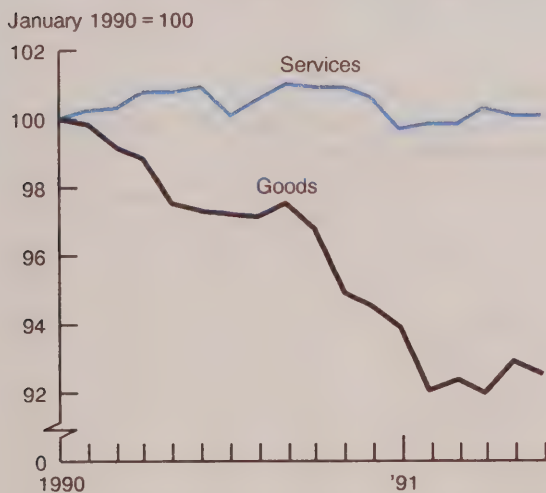
Employment changes

Over the last 18 months, full-time employment has declined while part-time work has risen.



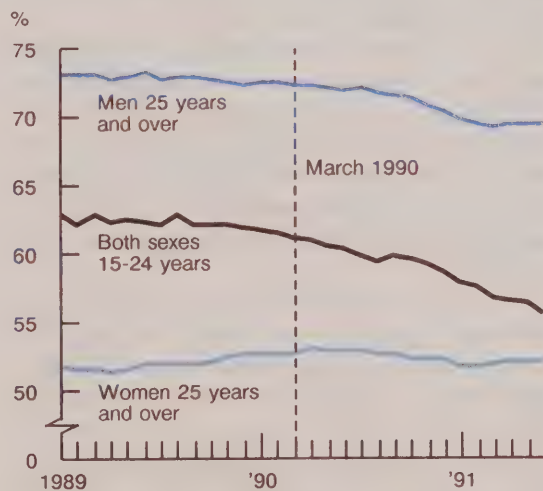
Employment changes

Employment in the service industries has remained fairly stable throughout this recession.



Employment/population ratios

The employment/population ratio for adult women has dropped only slightly since March 1990.



Source: Labour Force Survey

Note: Monthly data are seasonally adjusted.

goods-producing industries, which were hardest hit by the recession. For women, the picture was different. Employment losses in January, February, and June were exceeded by gains in March, April and May, slightly raising the June 1991 figure by 5,000 over that of December 1990.

The proportion of part-time jobs has grown again

As of June 1991, part-time employment constituted 16.4% of total employment, up from the annual average of 15.4% recorded in 1990. In comparison, the proportion of part-time employment stood at 13.0% in 1980. This percentage grew during the last recession partly because the service-producing industries, where part-time work is common, were less affected. The proportion continued to increase to reach 15.3% in 1984, mainly because employment growth in services was relatively greater than in goods-producing industries. It remained fairly constant over the past seven years, but once again the downturn raised the ratio, as full-time employment declined and part-time work increased.

Full-time employment in this recession seems to have bottomed out in February. Despite a marginal net increase in the next four months, the June 1991 level was 167,000 below that at the end of 1990. On the other hand, part-time employment increased by 56,000 between last December and June.

It is worth noting that not all of the increase in part-time work during the recession was entirely the result of personal "preference". This is not surprising because many people may accept part-time work during an economic downturn because full-time work is not available.¹ Over the year June 1990 to June 1991, the number of these "involuntary" part-timers rose by 167,000 (unadjusted) while that of persons working part time for other reasons fell by 53,000. As

a result, the proportion of involuntary to total part-time work increased from roughly one in five to one in four.

Ontario has been the big loser

Employment losses during the past 15 months have not been evenly distributed across the provinces. Ontario, for example, has sustained the largest employment losses during this recession (Table 1). It accounted for three-quarters (226,000) of the country's total decline in employment, from the onset of the recession at the end of March 1990 through to March 1991, although its share of employment at the beginning of the period was about 40%. Employment declines in Ontario totalled 130,000 in January and February 1991 alone. And despite some slight improvements in the second quarter, that province's employment level in June was still 101,000 below the figure at the end of 1990. The manufacturing industry, concentrated in Ontario, was hit hard with plant closures and layoffs, which accounted in large measure for the province's disproportionate employment decline.

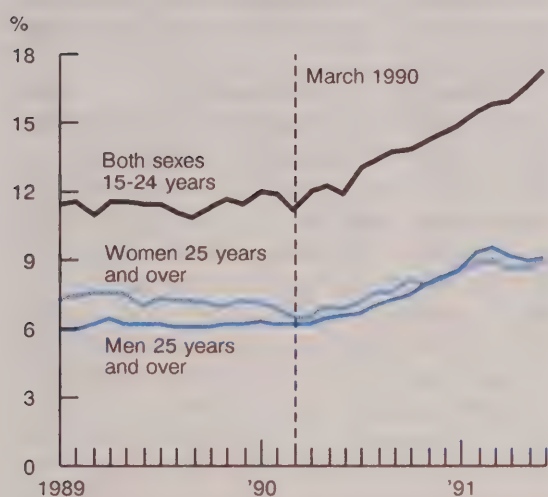
Table 1
Changes in employment by province
(seasonally adjusted)

	March 1990 to March 1991		March 1991 to June 1991	
	'000	%	'000	%
Canada	-305	-2.4	60	0.5
Newfoundland	-1	-0.5	-16	-8.0
Prince Edward Island	-2	-3.7	1	1.9
Nova Scotia	-4	-1.1	-3	-0.8
New Brunswick	-5	-1.7	-1	-0.4
Quebec	-81	-2.6	3	0.1
Ontario	-226	-4.5	17	0.4
Manitoba	-15	-3.0	4	0.8
Saskatchewan	-1	-0.2	2	0.4
Alberta	12	1.0	8	0.6
British Columbia	21	1.5	25	1.7

Source: Labour Force Survey

Unemployment rates

Unemployment rates for adult women have been lower than those for men since December 1990.

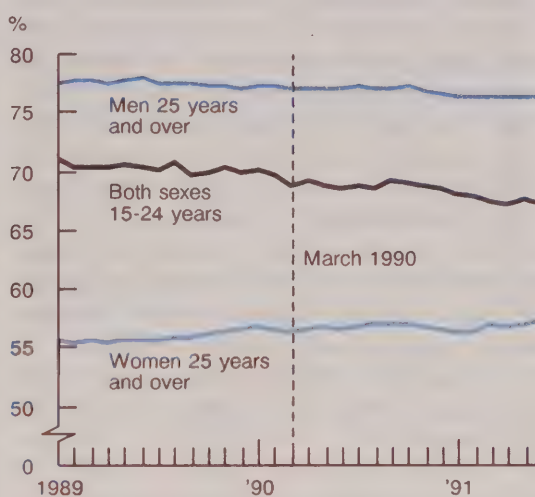


Source: Labour Force Survey

Note: Monthly data are seasonally adjusted.

Participation rates

Youth participation rates have declined the most in the current recession.

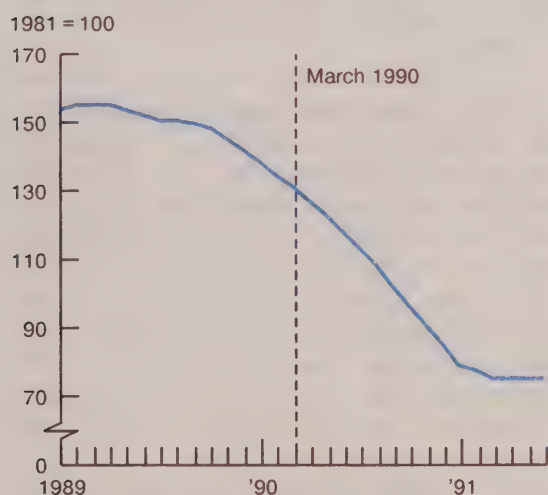


Source: Labour Force Survey

Note: Monthly data are seasonally adjusted.

Help-wanted index

The decline in the help-wanted index appears to have ended during the second quarter of 1991.

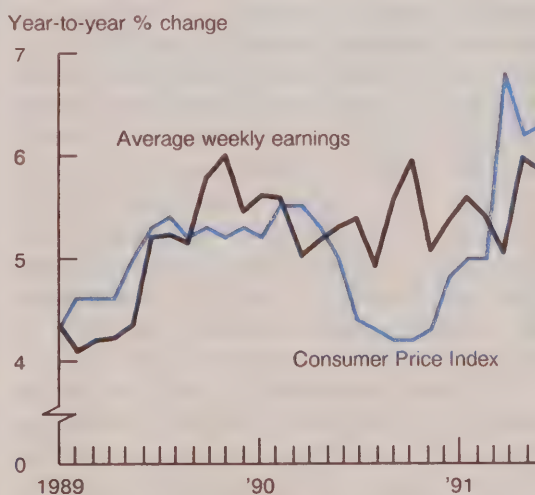


Source: Help-Wanted Index

Note: The monthly data are seasonally adjusted; only the trend-cycle is displayed.

Weekly earnings and the Consumer Price Index

Reversing recent trends, the rise in the CPI has outpaced increases in weekly earnings in 1991.



Sources: Survey of Employment, Payrolls and Hours and Consumer Price Index

The picture for the remaining provinces was mixed. Over the March 1990 to March 1991 period, appreciable employment losses were registered in Quebec and Manitoba. Employment levels remained little changed in Atlantic Canada and Saskatchewan, and gains were recorded in Alberta and British Columbia. Since then, Prince Edward Island, Quebec and all of the western provinces have registered some employment gains. The increase in British Columbia has been substantial. In contrast, employment losses have been recorded in Newfoundland, Nova Scotia and New Brunswick, with the largest decline in Newfoundland.

Manufacturing employment was up after a two-year decline

Following the last recession, increases were recorded in manufacturing employment each year from 1984 through 1989, but the 1981 peak was never regained. Employment declines in manufacturing began in the last half of 1989 and continued with minor interruptions thereafter. The largest monthly decline of the current recession occurred between January and February this year (-56,000). This drop occurred when manufacturing plants were running at their lowest level of capacity since the 1981-82 recession (that is, 70.5% in the first quarter of 1991). The overall employment drop in manufacturing from the beginning of the recession in March 1990 through to March 1991 was 200,000 (-9.8%). This is similar to the decline recorded during the first 12 months of the 1981-82 recession.

Though employment levels in manufacturing have been relatively flat since February, some positive signs for the industry began to emerge at the end of the first quarter. Total shipments, including motor vehicle shipments, were up slightly in March. Furthermore, manufacturing inventories fell in March, rolled-steel shipments rose in April and some employees were

recalled in the steel industry. At mid-1991, manufacturing accounted for 15.1% of total employment, down from 19.3% a decade earlier.

Unlike manufacturing, where employment losses during the first full year of the 1990-91 recession matched those in the first year of the 1981-82 downturn, employment declines in the construction industry for these same periods were more pronounced in this recession than in the last. High mortgage rates contributed to the reduced activity in construction in both periods. The level of employment dropped by 120,000 between March 1990 and March 1991, a reduction of about 15%. During the first 12 months of the 1981-82 recession, the decline was only 8%. Following the largest monthly decline in the present recession (-38,000 between December and January), construction employment showed little change during the period from February to June 1991. In March, housing starts and sales began to pick up, largely reflecting the falling mortgage interest rates that began in the last half of 1990. Some optimism was being expressed for job growth in the industry.

Employment levels in the service-producing industries have not been affected by the downturn as much as in the goods-producing industries. Finance, insurance and real estate employment rose during the last half of 1990, recorded a large decline between December and January 1991 and remained stable thereafter. In the community, personal and business service industries, employment declined slightly during the second half of 1990 and increased throughout the first five months of 1991, but posted a small decline in June.

In contrast, in transportation, communication and other utilities, employment levels declined from the start of 1991, following a year of relatively little change. Employment in trade has shown a steady downward trend since last October. The

Table 2
Changes in employment by industry
(seasonally adjusted)

	March 1990 to March 1991		March 1991 to June 1991	
	'000	%	'000	%
All industries	-305	-2.4	60	0.5
Goods-producing	-250	-6.8	7	0.2
Service-producing	-45	-0.5	21	0.2
Agriculture	39	9.3	-6	-1.3
Other primary industries	-7	-2.4	10	3.6
Manufacturing	-200	-9.8	12	0.6
Construction	-120	-14.9	12	1.7
Transportation, communication and other utilities	-26	-2.7	-16	-1.7
Trade	-72	-3.2	-3	-0.1
Finance, insurance and real estate	15	2.0	-11	-1.5
Community, personal and business services	77	1.8	38	0.9
Public administration	-25	-3.0	17	2.1

Source: Labour Force Survey

largest monthly drop in trade was posted in January (-39,000). The total decline between October 1990 and June 1991 was 114,000 (-5.0%).

Unemployment continued to rise

Canada's post-war record number of unemployed (1,539,000) was reached in December 1982. During the recovery period, unemployment dropped to 978,000 in March 1990. It rose steadily from June of last year to March 1991, declined in April and increased again to reach 1,453,000 in June.

The unemployment rate reflects these changes. From the March 1990 level of 7.2%, it rose throughout the last two quarters of 1990 and the first quarter of 1991. In March 1991, the rate was 10.5%. Then, it fell to 10.2% in April, edged up to 10.3% in May and again reached 10.5% in June. In the last recessionary period, the rate rose from 6.9% in August 1981 to peak at 12.8% in December 1982.

Youth unemployment continued its steady rise in the last half of 1990 and into the first six months of this year. In the 1981-82 recession, youths accounted for a larger share of total unemployment than in the current recession, but this is partly due to a decrease in their share of the overall population, from 24% in 1982 to 18% in 1990. The youth unemployment rate rose each month, from 11.9% in June 1990 to 17.3% in June 1991. Over the same period, the adult rate increased from 6.7% to 9.0%.

Men experienced a larger increase in their unemployment rate during the first half of this year than women. The rate for men rose from 9.6% at the end of last year to 11.0% in June 1991. For women, the increase was less pronounced, rising from 9.0% in December to 9.9% in June 1991. From the spring of 1985 until the fall of 1990, the unemployment rate for men was consistently lower than the rate for women. Since then this relationship has been reversed. A similar crossover, showing a higher rate among men, was observed during the 1981-82 recession.

Most provinces, except Ontario, recorded increases in unemployment in the first 12 months of the current recession that were significantly less than the increases recorded during the first 12 months of the last recession. Ontario's overall unemployment rate almost doubled from the onset of the recession at the end of March 1990 (5.3%) to 10.2% in June 1991. The severe impact of the recession on Ontario is evident from the changes in ranking by unemployment rates of census metropolitan areas (CMAs). Toronto relinquished its number one position, held throughout the 1980s, as the CMA with the lowest rate of unemployment (Table 3). In fact, most of the 8 Ontario CMAs, which ranked in the top 10 places in the first quarter of 1990, had moved well down the list one year later.

Table 3
Unemployment in census metropolitan areas, first quarters of 1990 and 1991
 (unadjusted data)

	First quarter 1990			First quarter 1991		
	'000	Rate	Rank	'000	Rate	Rank
Toronto	93	4.6	1	187	9.4	9
Hamilton	17	5.1	2	30	9.5	10
London	9	5.5	3	15	8.3	4
Ottawa-Hull	28	5.9	4	37	7.6	1
Kitchener-Waterloo	12	6.4	5	23	11.9	18
Oshawa	7	6.5	6	12	11.1	15
Vancouver	57	6.9	7	81	9.4	7
Calgary	27	7.1	8	34	8.7	6
Sudbury	5	7.7	9	7	11.0	14
St. Catharines-Niagara	12	7.9	10	23	14.1	23
Quebec	24	8.0	11	25	7.9	3
Winnipeg	26	8.1	12	33	10.3	12
Edmonton	32	8.2	13	37	9.4	8
Thunder Bay	5	8.4	14	7	10.8	13
Halifax	14	8.4	15	17	9.7	11
Saskatoon	8	8.9	16	12	13.1	21
Regina	9	9.3	17	7	7.7	2
Victoria	12	9.4	18	11	8.3	5
Trois-Rivières	5	9.8	19	8	14.2	24
Montreal	159	10.1	20	217	13.9	22
Saint John	6	10.5	21	7	11.6	16
Sherbrooke	7	10.8	22	8	12.1	19
Windsor	15	11.0	23	19	14.7	25
Chicoutimi-Jonquière	7	11.1	24	8	11.7	17
St. John's	11	13.0	25	10	12.5	20

Source: Labour Force Survey

Note: Data for Halifax and Winnipeg refer to Labour Force Survey economic regions 250 and 670 respectively.

There have been fewer discouraged workers this time

When economic times worsen, increasing numbers of people give up hope of finding jobs and stop looking. They are usually referred to as "discouraged workers".² During the first six months prior to the 1981-82 recession, the number of discouraged workers averaged about 50,000. By September 1982, the number had risen to 133,000. As the post-recession expansion set in, the level gradually fell to a low of 28,000 in June 1989. By the first quarter of 1990 it had settled at 35,000, where it remained during the early quarters of this recession (the second and third quarters of 1990). But it began to increase again as the downturn

worsened during the fourth quarter and appears to have peaked at 57,000 in February 1991. The peak level of discouraged workers in this recession is, however, less than half the 1981-82 downturn peak. The lower numbers during this recession may be related to several factors, but most notable is the heavy concentration of unemployment in Ontario, where worker discouragement is usually relatively low.³

The labour force has resumed its growth

In poor economic times, some people defer entering the labour force, while others may return to school, take early retirement or simply give up the search for employment.

The total labour force (consisting of the employed and the unemployed), peaked at 13.8 million in October last year, and fell to 13.7 million from November 1990 to April 1991. It regained its peak level in May and exceeded it in June. By comparison, it took twice as long to restore the shrinkage in the labour force after the last recession.

The overall participation rate (the proportion of the total population in the labour force) was quite flat during the first six months of 1991 (about 66.5%), slightly down from the average (67.0%) recorded in both 1990 and 1989. Both the male and female labour forces began declining in the final quarter of 1990. The drop ended sooner for men (January versus February) but was twice as large in percentage terms (1.0% versus 0.5%).

The employment/population ratio has fallen

In the last recession, the employment/population ratio for Canada (the percentage of the total population 15 years and over who are employed) fell from a peak of 60.3% in February 1981 to bottom out at 55.9% in December 1982. In this recession, it fell from a peak of 62.1% in April 1990 and appears to have bottomed out at 59.5% in March 1991. Since then there has been little change in the ratio.

Employment/population ratios vary widely by province. In 1990 this ratio ranged from 47% in Newfoundland to 67% in Alberta. The declines in most provinces during the current recessionary period have been significantly smaller than those recorded during the last. Saskatchewan actually recorded a slight increase in its employment/population ratio during this recession, mainly because a marginal decline in population was accompanied by a slight increase in employment.

The demand for labour stopped falling

The national help-wanted index, an early indicator of the demand for labour, tracks the number of help-wanted advertisements in daily newspapers in 20 major metropolitan areas. Following a period of general decline beginning in April 1989, the index has remained stable since March 1991, thus providing no clear signal on the direction of the demand for labour in the near future.⁴

Increases in earnings lagged behind those of consumer prices

Average weekly earnings increased more rapidly than the Consumer Price Index (CPI) during the last three quarters of 1990, but the reverse was true in the first quarter of 1991. The introduction of the Goods and Services Tax in January contributed to a significant increase in the CPI with the result that in the first quarter of 1991 the increase in average weekly earnings (5.6%) lagged behind the rise in the CPI (6.4%).

Conclusion

Economists were seeing some positive signs that a recovery had begun during the second quarter of 1991, but labour market indicators were mixed. Significant employment increases were recorded in service-producing industries, and several factors pointed towards some employment growth in construction and manufacturing. Nevertheless many key industries still appeared weak. For example, the transportation, communication and other utilities industries have not shown any improvement so far this year, and employment in trade continues to remain considerably below the pre-recession (1990-91) levels. □

Notes

¹ See E.B. Akyeampong, *The labour force* (December 1986).

² See E.B. Akyeampong, *The labour force* (April 1987).

³ Ibid.

⁴ See C. Haggag-Guénette, *Perspectives on labour and income* (Autumn 1989).

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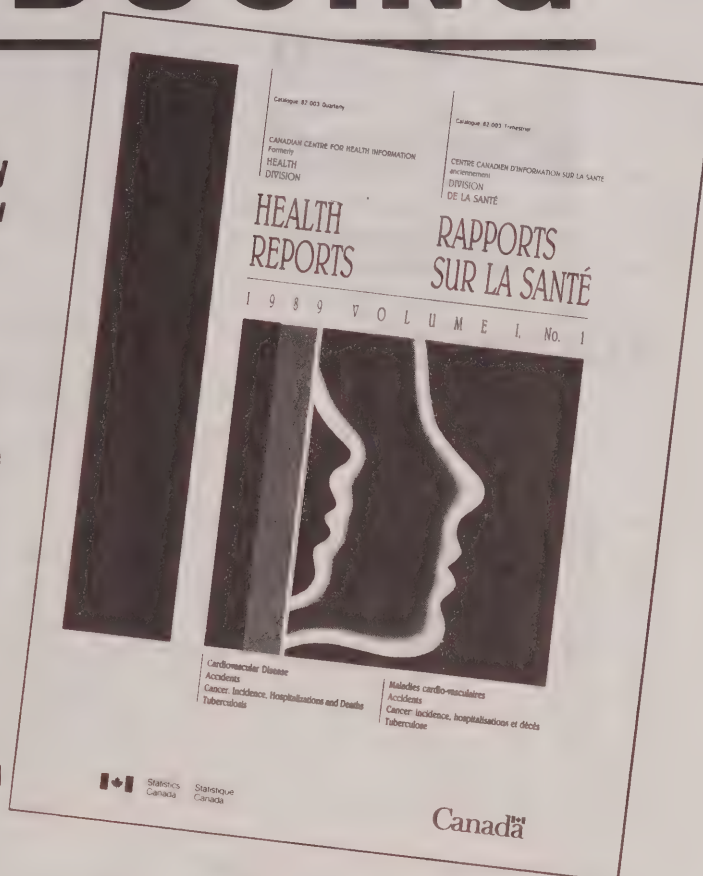
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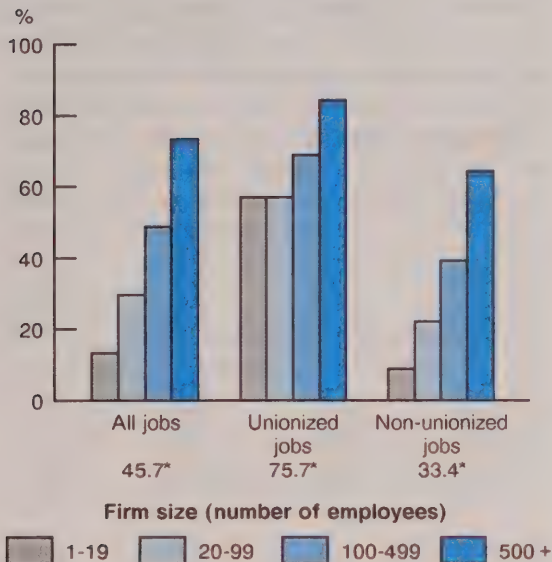


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Pension plan coverage** by union status and firm size, 1986

Pension plan coverage increases with firm size.



Source: Labour Market Activity Survey

* Percentage over firms of all sizes

** Coverage is defined as the proportion of total hours worked by persons with pension plans.

in the 25 to 34 age group, earning \$10 per hour in a small manufacturing firm, has about a 9% chance of being permanently laid off. The figure for a comparable worker employed in a large firm is less than half this.

Large firms pay higher wages

On the whole, large firms pay an average hourly wage (\$13.55) that exceeds by more than 50% the average hourly wage paid by small firms (\$8.85) (Table 1). This relationship between wages and firm size also holds when differences in education, age, sex, industry or occupation are considered separately. However, part of the wage gap

disappears when all of these are taken into account simultaneously.

Non-unionized large firms pay on average 58% higher wages than non-unionized small firms. For unionized firms, the corresponding figure is only about 11%. This suggests that unions are successful in equalizing wages across firms in a given industry and/or occupation. But, if differences in industry, occupation and worker characteristics are accounted for, small firm/large firm wage differences for non-unionized jobs more closely resemble those for unionized jobs.⁹

Age also affects wage differences between small and large firms. As workers get older, large firm/small firm wage differences increase (from a difference of 27% for the 16 to 24 age group to 66% for the 45 to 54 age group, before tapering off to 54% for the 55 to 64 age group). Part of this age-wage gap profile may be due to higher seniority in large firms; the difference in seniority between workers in large firms and those in small firms increases substantially with age.¹⁰

Wage differences between large and small firms vary considerably across industries. In business services and in construction, hourly wages in large firms exceed those in small firms by 28% and 33% respectively, compared with 52% and 57% in manufacturing and distributive services. Although unionization tends to reduce wage differences between small and large firms, differences in unionization rates across sectors do not explain why large firms pay relatively more in some sectors than in others. Indeed, manufacturing and distributive services, which are the most unionized sectors, show far bigger wage differences between small and large firms than business services, which is the least unionized sector. Clearly, other factors such as education, age and occupation must be considered.

Table 1
Average hourly wages of full-time jobs by firm size, 1986

	Number of employees with the firm				(5) Absolute difference (4) - (1)	(6) Relative difference (5) ÷ (1)
	(1) 1-19	(2) 20-99	(3) 100-499	(4) 500 +		
	\$					
All jobs	8.85	10.68	12.03	13.55	4.70	0.53
Education						
0-8 years	8.34	9.62	10.76	12.34	4.00	0.48
9 to 11 years*	8.44	9.88	11.00	12.29	3.85	0.46
12 or 13 years**	8.44	9.86	11.13	12.75	4.31	0.51
Some postsecondary	8.86	10.26	12.18	13.56	4.70	0.53
Postsecondary certificate or diploma	9.79	12.20	12.22	14.26	4.47	0.46
University degree	12.35	16.34	17.23	18.47	6.12	0.50
Age						
16-24	6.77	7.47	7.95	8.57	1.80	0.27
25-34	9.14	10.60	11.65	12.89	3.75	0.41
35-44	10.26	12.49	13.31	14.61	4.35	0.42
45-54	9.82	12.20	13.60	16.27	6.45	0.66
55-64	9.42	10.74	14.14	14.50	5.08	0.54
Sex						
Male	10.06	11.88	13.30	14.87	4.81	0.48
Female	6.75	8.16	9.39	10.42	3.67	0.54
Union status						
Unionized	12.45	12.05	12.11	13.81	1.36	0.11
Non-unionized	8.46	10.33	12.00	13.34	4.88	0.58
Industry						
Forestry and mining	11.22	12.73	14.98	15.66	4.44	0.40
Construction	11.13	13.25	13.19	14.81	3.68	0.33
Manufacturing	9.24	10.37	11.74	14.07	4.83	0.52
Distributive services	9.53	10.83	12.83	15.00	5.47	0.57
Business services	10.12	13.53	13.75	12.99	2.87	0.28
Consumer services	7.23	8.49	9.88	9.91	2.68	0.37
Occupation						
Professionals and managers	10.55	13.76	15.83	16.50	5.95	0.56
White collar workers	7.14	8.94	10.06	10.79	3.65	0.51
Blue collar workers	9.78	10.47	11.28	13.81	4.03	0.41

Source: Labour Market Activity Survey

* 9 and 10 years in Quebec

** 11 years or more in Quebec

What underlies the wage gap?

Large firms pay on average 53% higher wages than small firms. Could this reflect differences in education, work experience, tenure, sex, unionization, industry, occupation and worker quality? The evidence

suggests that a substantial wage gap remains even after accounting for all of these factors.

Education, work experience and tenure

One explanation for the observed difference in wages between small and large firms

could be that workers in large firms are more educated, have more work experience and have been with their current employers for longer periods. Large firms would then pay higher wages simply because they employ a more qualified work force. Small firms would pay comparable wages to workers with comparable characteristics. Removing the potential effect of workers' education level, age and tenure¹¹ does indeed reduce the wage gap between large and small firms (from 53% to 27%), but it still remains substantial (Table 2).

Table 2
Percentage by which wages in firms of various sizes exceed those in small firms, 1986

	20-99 employees	100-499 employees	500 + employees
All jobs	21	36	53
All jobs controlling for differences in: A, B*	11	18	27
All jobs controlling for differences in: A, B, C*	9	16	21
Unionized jobs controlling for differences in: A, C*	5	10	17
Non-unionized jobs controlling for differences in: A, C*	9	16	20

Source: Labour Market Activity Survey

Note: For more details and for the complete list of controls used to derive the wage gaps, see Technical notes.

* A: Education, age, tenure and sex

B: Union status

C: Industry and occupation

Wage differences between men and women

Perhaps large firms pay higher wages simply because they employ proportionally more men than small firms do.¹² Since men receive higher wages than women (after accounting for differences in education, work experience and other relevant factors), this could explain the wage difference. However, the 27% wage difference noted above already takes into account the fact that large firms employ more men. This implies that all workers, men or women, receive higher wages on average when they are employed by large firms.

Unionization and higher wages

Perhaps large firms pay more simply because they are more likely to be unionized. And unions, through the collective bargaining process, may be exerting upward pressure on wages. However, although wages are clearly higher in unionized jobs, the 27% wage difference shown in Table 2 already reflects differences in unionization rates between large and small firms. On the other hand, it is among non-unionized jobs that large firm/small firm wage differences are bigger (Table 1). Perhaps large firms that are not unionized are paying workers a premium to avoid unionization. Before this argument can be considered, though, industry- and occupation-specific effects need to be examined.

Industry- and occupation-specific effects

Perhaps wage differences between workers having similar education, work experience and tenure merely reflect that jobs in large firms are in industries and/or occupations where working conditions are less favourable. To compensate workers, large firms would have to pay higher wages. Also, large firms may be in industries for which training or supervisory costs are particularly high.¹³ If so, they may find it profitable to pay

higher wages to reduce turnover or to increase worker effort. While the data set used for this analysis does not contain information on working conditions, taking into account differences in industry and occupation may help capture part of the variation in working conditions that occurs across industries and occupations. This reduces the wage difference between large and small firms, but it remains sizeable at 21% (Table 2).¹⁴ Thus, industry-specific or occupation-specific effects, whether they result from differences in working conditions, or in training or supervisory costs, account for a fairly limited portion of the wage gap.¹⁵

Higher wages and union avoidance

Large firms with non-unionized jobs could be paying higher wages to avoid unionization. If so, then the wage/firm size effect should be smaller for workers employed in occupations or industries for which the threat of unionization is small than for non-unionized workers as a whole. However, this was not found to be the case (Table 3). This suggests that, if union avoidance efforts matter, their influence is fairly limited.

Differences in worker quality

Workers having the same education level, work experience and tenure may have other different inherent or acquired characteristics that are not directly measurable. It is then possible that the remaining wage gap found after accounting for all previous variables reflects these differences. Large firms may pay higher wages simply because they employ, in some sense, "better" workers. While differences in these other characteristics cannot be measured directly, they can nevertheless be taken into account.

One would expect that the wage change observed when a worker takes on a new job would depend only on what has changed from the old job to the new one; for example, the industry or occupation of the

Table 3

Percentage by which wages in firms of various sizes exceed those in small firms, for various subgroups, 1986

	20-99 employees	100-499 employees	500+ employees
Non-unionized workers controlling for differences in: A, C*	9	16	20
Professionals and managers controlling for differences in: A, B, C*	17	27	31
Non-unionized workers employed in slightly unionized occupations** controlling for differences in: A, C*	18	27	23
Non-unionized workers employed in slightly unionized industries** controlling for differences in: A, C*	21	27	16

Source: Labour Market Activity Survey

* A: Education, age, tenure and sex

B: Union status

C: Industry and occupation

** Slightly unionized occupations (industries) refer to occupations (industries) for which the unionization rate is less than 10%. For more details and for the complete list of controls used to derive the wage gaps, see Technical notes.

job and whether or not the job is unionized. Within a short time (one year, for example) it should not depend on worker "quality", which should remain essentially the same during the job change. It should also not depend on whether a worker moved from a small to a large firm, provided all firms pay comparable wages for workers of comparable quality. In other words, if firm size does not affect wages, workers moving from small to

large firms and those remaining in small firms while changing jobs should experience similar wage changes. Clearly, this is not the case (Table 4). In 1986, workers who moved from small to large firms received 9% higher net wage increases than those who changed jobs within small firms.

A word of caution is needed, however. The wage gap for job changers is only about 7% (Table 4) – much less than the 21% observed for all workers (Table 2). Why this is so is not clear but it should warn against assuming that the results obtained for job changers apply to all workers.

Table 4
Percentage by which wages in firms of various sizes exceed those in small firms, job changers only*, 1986

	20-99 employees	100-499 employees	500 + employees
Controlling for differences in: A, B, C**	8	13	7
Controlling for differences in: A, B, C, D**	4	8	9

Source: Labour Market Activity Survey

* The jobs covered by this comparison are limited to those held by persons who changed jobs during the year (1986).

** A: Education, age, tenure and sex

B: Union status

C: Industry and occupation

D: Worker quality (see text for definition)

Overall, large firms pay at least 50% higher wages than small firms. However, allowing for worker differences in education, age, tenure, sex, and union status reduces the difference to 27%. Taking into account differences in industry and occupation further reduces the difference to 21%.

What underlies the remaining wage gap?

While it is not possible to give a definitive answer, there are many explanations that could account for the remaining wage gap. Perhaps large firms pay higher wages:

- (1) because they have more market power and are thus able to share part of their profits with workers;
- (2) to compensate workers for differences in working conditions occurring within a given occupation in a given industry;
- (3) because they may face a limited supply of applicants in local labour markets;¹⁶
- (4) to increase worker effort;¹⁷
- (5) because they have higher training costs and want to reduce turnover;¹⁸
- (6) because they rely more on teamwork and hope to raise the work norms of their employees.¹⁹

Even if large firms have more market power (item 1 above), this does not explain why they would find it profitable to pay higher wages. The other arguments listed above offer possible answers to this question. While this study has not looked at differences in working conditions occurring within occupations in a given industry (item 2), evidence from the United States²⁰ suggests that this does not account for an important part of the wage difference. Moreover, the fact that workers stay longer in large firms, although not sufficient in itself to conclude that working conditions are better in large firms,²¹ is at least compatible with such an idea. The remaining four arguments have not been investigated in this article but could prove useful in explaining the remaining wage difference.

Technical notes

Estimating the wage gap between small and large firms

The wage gap between small and large firms can be estimated by multivariate regression techniques. The logarithm of the hourly wage of worker i at time t , $\ln W_{it}$, is specified as a linear function of a vector X_{it} of explanatory variables, of firm size variables and of a random term u_{it} :

$$\ln W_{it} = B \cdot X_{it} + a1 \cdot \text{SIZE1}_{it} + a2 \cdot \text{SIZE2}_{it} + a3 \cdot \text{SIZE3}_{it} + u_{it}$$

where: $\text{SIZE1}_{it} = 1$ if worker i is employed in a firm with 20 to 99 employees

0 otherwise

$\text{SIZE2}_{it} = 1$ if worker i is employed in a firm with 100 to 499 employees

0 otherwise

$\text{SIZE3}_{it} = 1$ if worker i is employed in a firm with 500 employees or more

0 otherwise

The above equation implies that the percentage gap between wages in large and small firms equals: $\exp(a3) - 1$. Similarly, the percentage gap between wages paid by firms employing between 100 and 499 employees and small firms equals: $\exp(a2) - 1$. The percentage gap between wages paid by firms employing between 20 and 99 employees and small firms equals: $\exp(a1) - 1$ (Tables 2, 3 and 4).

The wage gaps reported in the second row of Table 2 result from a wage equation in which the vector X_{it} contains the following set of explanatory variables:

- five education dummies
- age, age squared
- tenure, tenure squared
- union status
- sex
- marital status
- four region dummies
- one census metropolitan area dummy
- one marital status/sex interaction, one age/sex interaction, one age squared/sex interaction, five education/sex interactions.

The wage gaps reported in rows 3 to 5 of Table 2, in Table 3 and in the first row of Table 4 result from a wage equation in which the vector X_{it} contains, along with all previous variables, 37 industry dummies and 38 occupation dummies.

In many studies that examine the impact on wages of unionization [Freeman (1984)], industry [Krueger and Summers (1988)] or firm size [Evans and Leighton (1989), Brown and Medoff (1989)] it is argued that part of the variation in wages can be attributed to workers with differing unobserved abilities. More precisely, if workers in large firms have more of these unobserved abilities, then it is possible that the wage gap found by using the above wage equation merely reflects an "unobservable worker quality gap". Looking at wage changes of job changers instead of wages allows the portion of these unobserved abilities that is constant over time to be taken into account. Consider the following wage equation:

$$\ln W_{it} = B \cdot X_{it} + a1 \cdot \text{SIZE1}_{it} + a2 \cdot \text{SIZE2}_{it} + a3 \cdot \text{SIZE3}_{it} + q_i + u_{it}$$

where W_{it} , the wage of worker i at time t , depends on unobserved constant-over-time abilities q_i , as well as on all previous variables. First-differencing this equation leads to the following equation:

$$\ln W_{it} - \ln W_{it-1} = B \cdot (X_{it} - X_{it-1}) + a1 \cdot (\text{SIZE1}_{it} - \text{SIZE1}_{it-1}) + a2 \cdot (\text{SIZE2}_{it} - \text{SIZE2}_{it-1}) + a3 \cdot (\text{SIZE3}_{it} - \text{SIZE3}_{it-1}) + (u_{it} - u_{it-1})$$

in which unobserved constant-over-time abilities no longer appear. The wage gaps reported in the second row of Table 4 result from such a first-difference wage equation. In this case, the vector $X_{it} - X_{it-1}$ includes the following variables expressed in first difference:

- tenure, tenure squared
- union status
- 37 industry dummies
- 38 occupation dummies.

A dummy variable is also added to distinguish job changers who stay in the same occupation from those who change occupations when going from their first to second jobs.

For all regressions[†] (Tables 2, 3 and 4), the size coefficients are significant at the 5% level.

[†] For complete regression results see R. Morissette, "Canadian jobs and firm size: do smaller firms pay less?" (1991).

Conclusion

Jobs in large firms are more likely to be unionized and covered by pension plans, and are less likely to be ended by a permanent layoff. And, most notably, they are more highly paid.

The results presented here suggest that wage differences across Canadian workers depend not only on differences in

education, sex and work experience, but also on factors unrelated to worker attributes. Workers with similar characteristics may receive substantially different wages simply because they work for firms of different sizes. Thus, from a worker's perspective, receiving a higher wage may simply be the result of having been in the right place at the right time. □

Notes

¹ See Organisation for Economic Co-operation and Development, "Employment in small and large firms: where have the jobs come from?" (1985) for summaries of several studies which show that this is true. Especially note "A study of job creation in Canada: 1974-1982", "A study of job creation: 1975 to 1982 and forecasts to 1990" and "Relative performance of size groups in Canadian manufacturing sectors".

² L. Thurow, *Generating inequality* (1976), and J.I. Bulow and L.H. Summers, *Journal of labor economics* (1986), develop this argument.

³ In 1986, hours worked in full-time jobs accounted for 92% of hours worked in both full-time and part-time jobs in the commercial sector. In this study, the commercial sector includes all industries except agriculture, fishing, and public services. The figures presented in this study refer to hours worked in full-time jobs in the commercial sector (see *A few words about the data*).

⁴ The major industrial groups used in this paper include the following divisions (defined by the 1980 Standard Industrial Classification):

Forestry and mining: logging and forestry; mining, quarrying and oil wells.

Construction

Manufacturing

Distributive services: transportation and storage; communication and other utilities; wholesale trade.

Business services: finance and insurance; real estate operators and insurance agents; business services.

Consumer services: retail trade; accommodation, food and beverage services; other services.

The distribution of working hours across these major industrial groups in 1986 was:

Forestry and mining: 3.6%

Construction: 7.0%

Manufacturing: 30.5%

Distributive services: 19.7%

Business services: 13.7%

Consumer services: 25.4%

(The total does not add to 100.0% due to rounding.)

⁵ In business services, the proportion of working hours in white-collar occupations such as management, natural and social science occupations, and clerical work is twice as large as that for the entire economy (76.6% versus 37.3%).

⁶ In 1986, working hours in unionized jobs accounted for 29% of all working hours, compared with 71% in non-unionized jobs.

⁷ This can be seen when comparing pension plan coverage between unionized and non-unionized jobs.

⁸ Industry is also a major determinant of pension plan coverage. For instance, if differences in union status and firm size are taken into account, consumer services have lower pension plan coverage than business services. However, the results given remain when differences in industry are also taken into account.

⁹ See note 14.

¹⁰ The difference (between large and small firms) in the number of months spent with the current employer increases with age. While the difference is negligible for workers in the 16 to 24 age group, it amounts to 25 months for those in the 35 to 44 age group and to 66 months for those in the 45 to 54 age group.

¹¹ The results in Tables 2, 3 and 4 are based on a more recent version of the 1986 LMAS file which contains a sample of 25,356 observations. Similar results are obtained using the earlier version of the file (containing 24,297 observations).

¹² Hours worked by male workers account for 70.3% of all hours worked in large firms, and 63.3% in small firms.

¹³ See J.L. Yellen, *American economic review* (1984).

¹⁴ Note that while the wage gap is slightly lower in unionized jobs than in non-unionized jobs (Table 2), there is now little difference, compared with what was observed in Table 1.

Notes – Concluded

¹⁵ When a more detailed occupational classification is used, the wage gap between large and small firms remains unchanged at 21%.

¹⁶ See C. Brown and J. Medoff, "The employer size wage effect" (1989).

¹⁷ See C. Shapiro and J.E. Stiglitz, *American economic review* (1984).

¹⁸ See S.C. Salop, *American economic review* (1979).

¹⁹ See G.A. Akerlof, *The quarterly journal of economics* (1982).

²⁰ Brown and Medoff, loc. cit.

²¹ Longer tenure in large firms could result from other factors such as greater job security, more extensive fringe benefits and more opportunities for career advancement within the firm.

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Family income inequality in the 1980s

Roger Love and Susan Poulin

The 1980s was a time of demographic and economic changes: the recession, high interest rates, an aging population, and continuing increases in the number of multiple-earner families. As a result, there has been considerable interest about what has happened to family income¹ during this period. How has income grown and how has it been distributed among families?² Did society become more polarized into "the haves" and "the have-nots" during the decade? Some labour market analysis of jobs has suggested the emergence of a "good jobs/bad jobs" society, resulting in fewer "middle class" jobs.³ Does this characteristic extend to the distribution of family income? Have "middle class" families become less prevalent leading to more families at the "rich" and "poor" ends of the income spectrum?

In addressing these questions, this paper shows that 1989 average family income was essentially unchanged from 1980. This experience contrasts sharply with earlier decades where family income at the end of the decade was substantially higher

than at the beginning. Additionally, shifts in the distribution of family income over the 1980s were not substantial. However, there was evidence of increased income inequality in the early part of the decade followed by a period of declining inequality for the latter years.

Family income after tax – little change

Average family income after tax – the income remaining after receipt of government benefits and the payment of income taxes – was \$40,400 in 1989, hardly changed from its value of \$40,200 in 1980. There were, however, important offsetting trends in the interim years: a decline of 6% from 1980 to 1983 and an increase of 7% from 1984 to 1989. The recession of the early 1980s and the subsequent recovery have obviously had an important influence on this trend.

This pattern of little overall growth in average income during the 1980s was substantially different from that experienced in earlier decades. Between 1971 and 1979, for example, average family income increased by 22%. Although after-tax income data are not available prior to 1971, pre-tax family income had notable increases in the 1950s and 1960s (up by 27% and 34% respectively).

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Median income tells a similar story during the 1980s

Although mean income is an important summary statistic, it can be influenced by a few very large incomes. Therefore, it may not accurately reflect the change experienced by a typical family. A measure that is not so affected is median income, that is, the income at which 50% of families have higher incomes and 50% have lower incomes.

Over the decade, median family income followed the general pattern shown by mean family income: it decreased 8% from 1980 to 1983 and increased 6% in the remaining years. However, the fall was steeper and the increase less than that for mean family income. As a result, the 1989 median of \$36,800 was less than the \$37,300 recorded

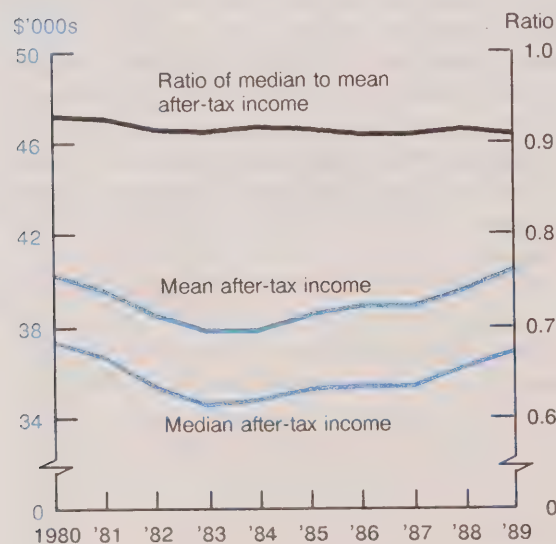
in 1980. Also, there was a slight tendency for the median to decline relative to the average income suggesting larger changes for higher income families.

Tax increases constrain growth in average family income

Factor income⁴ represents the income that a family receives through the labour market activity of family members plus investment income and rent (income of the factors of production). The government augments factor income through transfer payments (such as Old Age Security and Unemployment Insurance benefits), resulting in money income. It then "takes away" through taxes, resulting in after-tax income. The relationship between income after tax and

Median and mean after-tax family income in 1989 constant dollars

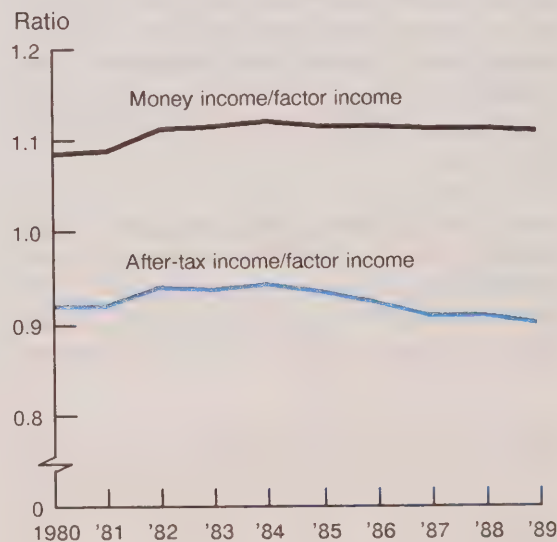
In 1989, mean income had returned to its 1980 level while median income had not.



Source: Survey of Consumer Finances

Money income and after-tax income as a ratio of factor income

For the last half of the decade, families kept a declining proportion of what they "earned".



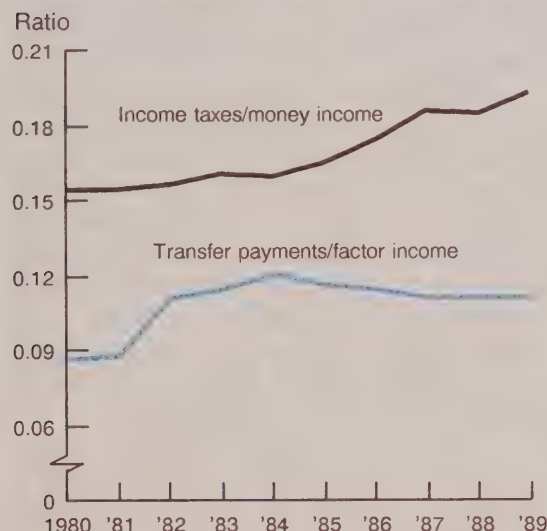
Source: Survey of Consumer Finances

factor income represents what is left, after government intervention, of the income a family "earns" through its own efforts.

The relationship between after-tax and factor income changed during the 1980s. In the early years, after-tax income increased relative to factor income. This was primarily due to the recession, which led to a decline of factor income and an increase in government transfer payments, especially Unemployment Insurance benefits and social assistance. Later in the decade, after-tax income declined as a proportion of factor income (from 94% to 90%). As a result, for the last half of the decade families were keeping a smaller percentage of what they "earned" (factor income). However, the percentage was about the same in 1989 as it was in 1980.

Tax and transfer trends

Transfers increased at the beginning of the decade, whereas taxes rose sharply in the last half.



Source: Survey of Consumer Finances

Underlying this relationship between factor income and after-tax income were changes in income taxes and government transfer payments. In 1989 constant dollars, average transfers increased from \$3,500 in 1980 to \$5,000 in 1989. Average taxes decreased from \$7,300 in 1980 to \$7,100 in 1982 and then consistently increased, up to \$9,600 in 1989. Transfers as a percentage of factor income rose until 1984 (when they reached 12%) and then slowly, but steadily, fell to 11% in 1989 (compared with about 8% in 1980). Taxes as a percentage of money income were 15% in 1980. They changed little in the first part of the decade but increased sharply in the later years, reaching 19% in 1989.

Taxes and transfers reduce income inequality

To the extent that some families receive less than the average or median income, while others receive more, there are income differences, disparities or inequalities. These differences are interesting because they indicate how the nation's income is shared by the members of society. Although it is relatively simple to describe how income is distributed, it is difficult to interpret whether a distribution is "good" or "bad" because there is no objective standard or community consensus about how much income inequality is undesirable. For example, income differences due to individual free choice related to different labour/leisure or consumption/saving decisions, and the fact that families are at different life-cycle stages may be considered desirable. However, it is important to describe the income distribution and how it changes as a basis for informed policy discussion.

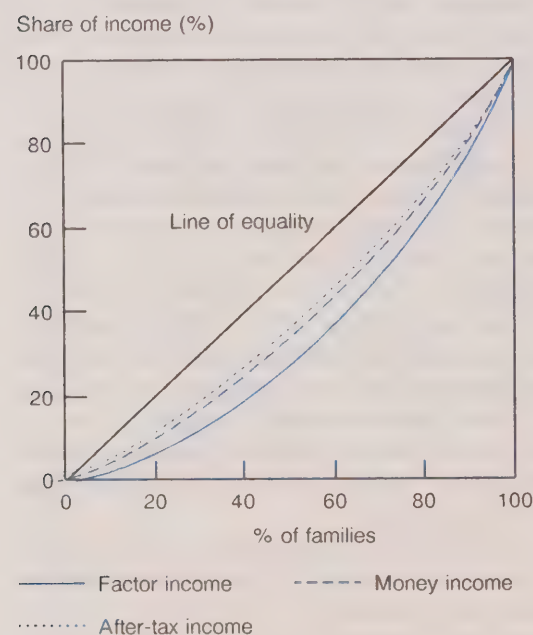
A useful way to describe the income distribution, especially in the analysis of historical changes, is to rank families according to the size of their incomes, divide them into 10 equal groups (deciles) and then

calculate the share of total income received by each group. In 1989, after-tax income shares ranged from 2.9% in the lowest decile (in other words, the lowest 10% of families according to income) to 22.0% in the highest decile. Stated in more familiar terms, the average income of the top decile was \$88,800 compared with \$11,600 for the lowest decile.

As one moves from factor income to money income to after-tax income, the degree of income inequality declines (see *Technical notes*). For example, in the absence of taxes and transfers, the lowest and highest deciles would have received 0.4% and 26.0% of income respectively. After transfer payments, the corresponding income shares were 2.4% and 23.9%, and after taxes and transfers, 2.9% and 22.0%. In other words, as a result of these taxes and

Impact of taxes and transfers on family income distribution, 1989

Transfers and taxes reduce income inequality.



Source: Survey of Consumer Finances

transfers, the ratio of the mean income in the highest decile to that of the lowest decile declined substantially, from 65 to 1 to 8 to 1. Additionally, the Gini coefficient diminished from .395 to .292, which is another indication of improved income inequality attributable to taxes and transfers.

Income inequality in the 1980s

It should be noted that there were only minor changes in decile income shares during the 1980s (Table 1). In fact, when rounded to the nearest percentage point, the shares were almost identical. Based on decile shares rounded to one decimal place, the largest changes between 1980 and 1989 were in the highest decile (from 21.6% to 22.4%) and the lowest decile (from 2.5% to 2.9%).

Even though the variations in income shares were not large, the pattern of change suggests that income inequality increased during the first three (or four) years of the decade, followed by a declining inequality trend.⁵ The income shares of the three top deciles generally increased until 1983, while those for the five lowest deciles declined. Consistent with these changes in income shares, the Gini coefficient increased from .293 to .302.

Starting in 1984, this pattern reversed and there was a general decline in income inequality for the remainder of the decade. The top decile's share declined slightly, from about 22.2% to 22.0%, and shares in the bottom three deciles clearly increased; for example, the bottom decile's share went from about 2.6% to 2.9%. Over this period, the Gini coefficient declined from .302 in 1984 to .292 in 1989, a level almost identical to that during 1981 and 1982.

Although the Gini coefficients were almost the same in 1980 and 1989, it is a mistake to conclude that the income distributions, and consequently inequality, were identical in the two years. This is because the underlying Lorenz curves for

Table 1
After-tax income shares of families

Deciles	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Lowest	2.5	2.7	2.7	2.6	2.6	2.7	2.8	2.9	2.9	2.9
2nd	4.7	4.7	4.7	4.6	4.6	4.7	4.7	4.8	4.8	4.8
3rd	6.3	6.2	6.1	6.0	6.0	6.0	6.0	6.0	6.1	6.2
4th	7.6	7.5	7.4	7.3	7.4	7.3	7.3	7.3	7.4	7.4
5th	8.8	8.7	8.6	8.5	8.6	8.5	8.5	8.5	8.5	8.5
6th	9.9	9.8	9.8	9.7	9.8	9.8	9.7	9.7	9.7	9.7
7th	11.1	11.1	11.1	11.1	11.1	11.1	11.0	11.0	11.0	11.0
8th	12.6	12.7	12.7	12.8	12.7	12.7	12.7	12.6	12.6	12.6
9th	14.8	14.9	15.1	15.1	15.0	15.0	14.9	15.1	15.0	15.0
Highest	21.7	21.6	21.9	22.3	22.2	22.2	22.4	22.2	21.8	22.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Gini coefficient	0.293	0.291	0.296	0.302	0.302	0.299	0.299	0.296	0.291	0.292

Source: Survey of Consumer Finances

these two years "cross", meaning that both some higher and some lower income deciles have increased their income shares. The end result was that the 1989 income shares for both the bottom two and top two deciles were higher than in 1980. Consequently, it is not possible to say whether 1989 income inequality was less or greater than in 1980.

The middle class

There is continuing concern about how the condition of the "middle class" changed in the 1980s. One way to examine this group is to look at the income shares received by the middle six deciles (the middle 60% of families ranked according to income). Over the decade the income share of this group was in the 55% to 56% range – somewhat less than the proportion of families in the group. The income share declined from 56.2% in 1980 to 55.1% in 1987 and rebounded somewhat thereafter to 55.4% in 1989.

Since there are always 60% of families in the middle six deciles, this view of the middle does not identify the proportion of families in a middle-income range. An alternative perspective on the middle class is to examine changes in the proportion of families within a fixed percentage of the

median income. In other words, how many families are a selected percentage above and below the median income? For this study, the middle-income group is defined as that group between 60% and 150% of the median income. (These limits were chosen because they are close to the income limits that separate the middle 60% of families from the top and bottom 20%. Because of this, the upper and lower limits are not the same distance from the median.)

Based on this approach, for the period 1980 to 1984, there was evidence of a declining proportion of families in the middle-income group. There were also increases in the top (those with incomes greater than 150% of the median) and bottom (those with incomes less than 60% of the median) groups, reflecting increased polarization in the distribution of income (Table 2).

Since 1984, the proportion of families in the middle group increased, although it did not reach the level of the early 1980s. Associated with this increase was a continuing decline in the proportion of families with incomes less than 60% of the median and little change in the top group. Consequently, there is no evidence of increased polarization since 1984.

Table 2

Distribution of families within selected limits of median after-tax income, 1980-1989

	Percentage of families			Total
	Less than 60% of the median	60% to 150% of the median	More than 150% of the median	
1980	20.1	61.8	18.1	100.0
1981	20.1	61.2	18.7	100.0
1982	20.6	59.7	19.7	100.0
1983	21.1	58.1	20.8	100.0
1984	21.6	58.8	19.6	100.0
1985	21.0	59.3	19.7	100.0
1986	20.7	59.5	19.8	100.0
1987	20.6	59.6	19.8	100.0
1988	20.1	60.1	19.8	100.0
1989	19.6	60.8	19.6	100.0

Source: Survey of Consumer Finances

Technical notes

Lorenz curve

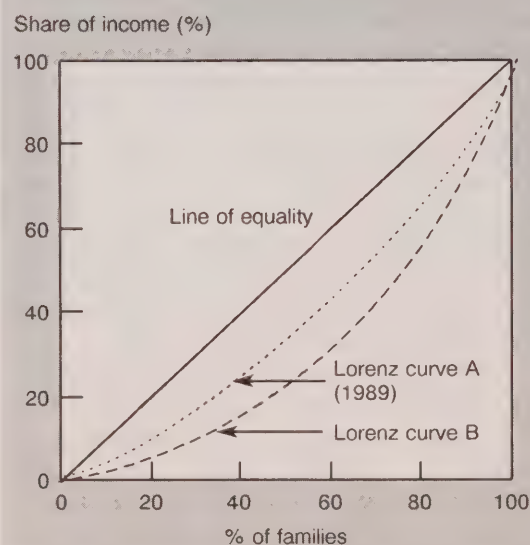
A Lorenz curve is a useful way to summarize income distribution data for evaluating differences and changes in income inequality. The Lorenz curve is the cumulative distribution of families according to income compared to the cumulative distribution of income that they receive. Using decile data, the Lorenz curve gives the share of income of the bottom 10%, bottom 20%, and so on, up to the bottom 100% of families. Graphically, the Lorenz curve will generally be a curve concave to the 45° line (see graph for the 1989 Lorenz curve represented by curve A). If the Lorenz curve coincides with the 45° line, sometimes called the line of complete equality, every family has the same income. At the other extreme, if one family has all the income, the Lorenz curve would coincide with the lower horizontal axis and the right vertical axis. In comparing income inequality based on two Lorenz curves, distribution A will be more equal than distribution B (see graph) if its Lorenz curve is closer to the 45° line. This means distribution A has larger income shares for lower deciles and smaller income shares for higher deciles. If the Lorenz curves cross it is not possible, without further assumptions, to say which distribution is more equal. In this case, a comparison of the two distributions does not indicate a clear advantage of one over the other in terms of the income shares. For example, if distribution A has larger income shares at the top and bottom deciles, then for part of the distribution, A is more equal, while for another part, B is more equal.

Gini coefficient

A summary measure of income inequality based on the Lorenz curve is the Gini coefficient, which varies from

zero, when all families have the same income, to one, when one family has all the income. The Gini is the ratio of the area between the Lorenz curve and the 45° line to the total area under the 45° line. When Lorenz curves do not cross, the direction of the Gini coefficient reflects the direction of income inequality as indicated by the Lorenz curves.

Lorenz curve showing the distribution of after-tax income among families



Summary

Average after-tax family income at the end of the 1980s was basically unchanged from 1980. This is in contrast to earlier decades (since the 1950s) where substantial increases in real income were observed.

The government, by the imposition of income taxes and the payment of program benefits, has reduced inequalities in the distribution of income.

Income inequality increased marginally during the early 1980s and declined somewhat later in the decade. However,

because of the way the distributions have changed, it is not possible to determine if the 1989 distribution is more equal than the one in 1980.

The share of total income received by the middle 60% of families declined until 1987 and increased marginally thereafter.

The proportion of families with incomes between 60% and 150% of the median income declined during the early 1980s, but has not declined since 1984. This analysis does not provide evidence of a persistent decline in middle class families during the 1980s. □

Notes

¹ The term "income" is sometimes used instead of the technically correct phrase "income after tax" or "after-tax income". After-tax income refers to money income from all sources (earnings, investment, government transfer payments) minus federal and provincial income taxes. All incomes are expressed in 1989 constant dollars.

² In this paper, a family refers to the economic family concept. It is composed of all members who live together and are related by blood, marriage or adoption. Unattached individuals are excluded from the analysis, because their characteristics differ from those of families. This makes income comparisons more uniform.

The data used in this paper originate from the Survey of Consumer Finances, an annual supplement to the Labour Force Survey.

³ See G. Picot, J. Myles and T. Wannell, *Good jobs/bad jobs and the declining middle: 1967 to 1986* (1990).

⁴ The term "factor" is commonly used in economic literature to refer to output as determined by the "factors" of production: land, capital and labour.

⁵ Applying traditional Lorenz curve methodology to the data (see *Technical notes*) and examining the year-to-year changes does not give a pattern of a clear decline or increase in inequality every year. The exceptions (four years) are cases of crossing Lorenz curves. These Lorenz curve crossings are not important because the extent of crossing tends to be minor in magnitude, and random in occurrence. If the crossings happened in four consecutive years the effect might have been important. The crossing Lorenz curves are best interpreted as indicating no change in the distributions between the two years.

Reference

- Picot G., J. Myles and T. Wannell. *Good jobs/bad jobs and the declining middle: 1967 to 1986*. Research paper no. 28, Business and Labour Market Analysis Group, Analytical Studies Branch, Ottawa: Statistics Canada, 1990.

Sources

A potpourri of information: survey news, including special surveys conducted as supplements to the Labour Force Survey; notes on research projects inside and outside Statistics Canada; recent publications and data releases; other items of news and future events.

Canadian adults took five million training or education courses

A public use microdata file containing results of the 1990 Adult Education and Training Survey (AETS) is now available to interested users. The survey, sponsored by Employment and Immigration Canada, provides information about Canadian adults who took any training or educational courses between December 1989 and November 1990. The data will help policy developers understand how the growth of adult education relates to skills upgrading and job retraining.

The Adult Education and Training Survey was conducted by Statistics Canada as a supplement to the November 1990 Labour Force Survey (LFS); a response rate of 93% was obtained. Data were collected from Canadians over the age of 16 and, of those who had taken courses in the previous 12 months, their reasons for doing so, nature and duration of their studies, and assistance received while they were enrolled.

The AETS shows that 1.4 million adult Canadians took full-time programs, 3.4 million took short-term or part-time

courses, and 173,000 took apprenticeship or other full-time training programs organized or provided by an employer. Other findings include the following:

- The most common field of study was commerce, management and business administration claiming 20% of full-time and 23% of part-time students; the second most popular among full-time students (15%) was social sciences and related and among part-time students (20%) it was engineering and applied science technologies and trades.
- 42% of adults enrolled full-time and 84% of those taking short-term or part-time courses were employed.
- Employers paid the tuition for 3% of full-time and 42% of part-time students; they also provided some kind of non-financial assistance (for example, time off) for 2% of full-time and 22% of part-time courses in which their employees had enrolled.
- 89% of full-time and 75% of short-term or part-time students were upgrading job skills or improving career prospects.
- Over 240,000 Canadian adults, regardless of their scholastic activity in the preceding 12 months, indicated that they were supposed to take education or training for employment-related reasons, but did not.

A second adult education survey is now being developed, and will be carried out in January 1992. Meanwhile, the microdata file of the 1990 Adult Education and Training Survey is available on magnetic tape. For more information, contact Stephen Arrowsmith at (613) 951-0566. □

Income profiles of husband-wife families in small neighbourhoods

After updating the figures with the most recent data, Statistics Canada will soon be releasing its 1989 Husband-Wife Family profiles. The profiles carry a range of demographic and income characteristics for families in small geographic areas.

The Small Area and Administrative Data Division created these family-based profiles to meet the data needs of professionals employed in the development of social policy, delivery of services, planning of marketing campaigns and similar services. The prototype, using 1985 tax data for a few provinces, was distributed among a group of potential users who were asked to assess the profiles' usefulness. Their positive response prompted the release of data to all interested users. The statistics are available for all of Canada for areas as small as urban FSAs, rural postal code regions and postal walks. (FSAs – Forward Sortation Areas – are the first three characters of the postal code.)

The profiles deal with husband-wife families, whether the couple is married or living common law. Coverage is provided for a variety of characteristics, including: age of spouses; age and number of children; family income by age of older spouse, family size, source of income; and the wife's employment income as a proportion of the combined husband-wife employment income. To protect taxfilers' confidentiality, data are

produced only if a minimum of 100 husband-wife families live in the area.

The statistical tables in the profiles have been updated to include 1989 tax data. The scope of the data is shown in this 1988 portrait of husband-wife families living in the Vancouver neighbourhood with the postal code beginning "V6W":

- 62.5% of a total of 200 husband-wife families had children; in 60% of these families, all the children were under 18.
- The median husband-wife family income was \$43,600.
- Families with the highest median income were those in which the older spouse was 35 to 44 years of age (\$48,800).
- Interest income was the second major source of income: it amounted to \$900,000, compared with \$9 million in employment earnings (includes wages, salaries and commissions as well as self-employment income).
- 100 families reported income of \$1.3 million from self-employment, accounting for 50% of those reporting employment income (this figure does not represent the number of families earning income exclusively from self-employment).

Because the profiles are necessarily restricted to families in which at least one partner files a tax return, users are cautioned that the number of families falls 4% short of demographic estimates.

The 1989 Husband-Wife Family profiles are scheduled for release in late summer 1991. For further information, please contact Customer Services, Small Area and Administrative Data Division, at (613) 951-9720; fax (613) 951-4745. □

Survey of school leavers part of plan to lower high school drop-out rates

About one in three Canadian children who start high school will not complete their education. With almost 100,000 of the teenagers who enter Grade 9 leaving school without graduating, the Canadian drop-out rate is estimated to be 30%. If this trend persists, in less than 10 years almost 1 million young drop-outs will be competing with their better-educated peers in the job market.

However, the level of skill demanded by employers is rising dramatically. Employment and Immigration Canada estimates that almost two-thirds of all new jobs created in this decade will require a college or university education. In 1986, less than half the new jobs made such a demand. Yet even then, drop-outs had trouble finding work; the unemployment rate for young people with less than a Grade 12 education was over 20%, twice as high as that for those with secondary or postsecondary qualifications.

To reduce the present drop-out rate, the federal government has committed almost \$300 million over five years to the Stay-in-School Initiative. One of the objectives is to expand existing labour market programs and services for young people at risk of dropping out.

To support this effort, Statistics Canada has been commissioned to conduct the first national Survey of School Leavers. The 1991 survey was carried out in April, using a sample frame of 18,000 18 to 20 year-olds identified from Family Allowance files. One purpose was to collect information on the transition of young people from school to work; but it was also designed to gather data on the factors that seem to predispose a teenager to leaving school. A third goal was to establish the actual drop-out rate. (All

data now used, including the figures quoted in the opening paragraph, are based on estimates derived from cohort studies.)

Questions asked ranged from the factual (whether high school was completed) to the sensitive (extent of drug use and academic failure). Extensive focus group consultations with young people were held before the survey questionnaire was finalized. During these tests, the survey designers were surprised to learn from the participants that dropping out was not necessarily a decision taken at one point in time, but rather it was a process that started almost unconsciously. The original questionnaire was reworked in light of this, and the designers are confident that the survey captured the information required.

The survey respondents include drop-outs, graduates and continuers (those still in school), with the emphasis on young people who left high school without finishing. All respondents were asked about their high school experiences, and questions covered such issues as academic ability, course subject matter, and support from teachers or parents. Drop-outs were asked about the situation existing during the period when they left school: for example, if problems at home or school prompted their action, whether they discussed their decision with anyone, if they had dropped out more than once. Graduates and continuers were asked if they had ever considered quitting and why they didn't do so.

Data on labour force activity were collected from drop-outs and graduates. Questions covered current and past employment, work status, occupation, job satisfaction, job search methods, use of employment centres and training programs, and career plans. Information was also gathered on employment-related topics such as literacy, training or education taken after high school, leisure activities, and sources of income.

Preliminary results of the 1991 Survey of School Leavers are expected to be available in the fall. For information, contact Doug Higgins, Statistics Canada, at (613) 951-5870. □

Survey on aging in the community now under way

With a higher proportion of seniors in the Canadian population than ever before, and this trend accelerating as baby boomers age, a whole raft of social policies and programs will have to be redesigned. The greying of the population also concerns a wide range of interests in the private sector, from financial planners and marketers to retailers and home builders. Statistics Canada has been commissioned to conduct a survey of Canadians aged 45 and over to measure the factors that are important to people remaining independent in the community as they age. The results should help data users assess the current needs of seniors and what those may be in the future. They should also clarify the extent of demand for various services over the coming years.

The Survey of Independent Living will be carried out in September, using a base sample of 25,000 respondents identified from the Labour Force Survey. Each province can request an increased sample size to improve data quality at a detailed geographical level. The survey will collect data from respondents in age groups starting from age 45 on. They will be asked to provide baseline information on various aspects of their lives, such as employment, property ownership, sources of income, physical activity and amount of social contact, health limitations and home accidents, present psychological state, and overall satisfaction with lifestyle. Questions specifically for retirees focus on such issues as reasons for retiring, present

work force activity (if any), private pension benefits, and hobbies and activities.

The array of factors that determines the extent of a person's independence in later life, and the importance of knowing how many seniors are and will be independent, is reflected in the survey's sponsors: Health and Welfare Canada, Canada Mortgage and Housing Corporation, Consumer and Corporate Affairs Canada, Communications Canada, and Veterans Affairs Canada. Preliminary results will be available in the spring of 1992. For more information, contact Gilles Montigny at (613) 951-9731. □

One in five accidents in Canada happens on the job

The latest report in the General Social Survey (GSS) Analysis Series examines the nature, prevalence and economic impact of accidents. Based on the GSS Cycle 3 investigation of personal risk, *Accidents in Canada* presents the results of the first national survey of a broad range of accidents – motor vehicle, work-related, sports-related, and in- and near-home.

Cycle 3 was conducted in January and February of 1988 and collected data on the nature and frequency of the respondents' involvement in accidents or criminal incidents during 1987. Using the random digit dialling technique, a response rate of approximately 82% was obtained on a sample of almost 10,000 adults aged 15 years and over.

Though the whole publication is informative, *Perspectives* readers may find the data on work-related accidents particularly relevant. The International Labour Organization (ILO) defines work-related accidental injuries as "those recordable injuries resulting from accidents occurring at the place of work and resulting in death,

personal injury or acute disease". Work-related accidents have the potential not only to incapacitate the worker, but also to produce severe economic consequences for the employer. (Estimates of the loss to the Canadian economy caused by work accidents range from 1% to 4% of the gross national product.)

Using the ILO definition, *Accidents in Canada* concludes that, in 1987, accidents in the workplace (1.1 million) accounted for 21% of all accidents in Canada. Among other highlights of this report are:

- The majority of work injuries were dislocations, sprains, strains or bruises (39%), and cuts or scrapes (22%); about 10% of all work injuries involved broken bones.
- The pattern of accidents was similar among men and women, although there were some differences in the type of injuries sustained; 36% of men and 45% of women suffered dislocations, sprains, strains or bruises.
- The 25 to 44 age group recorded the highest rate of accidents (60%), and in almost all age categories, accident rates for men exceeded those for women.

The consequences of work injuries are numerous and far reaching. In 1987, work-related accidents accounted for:

- 17 million days of activity-loss (34% of all such days), 2.5 million days of bed-disability (26%), and 393,000 days of in-patient hospital care (19%).
- 39% of all spine and back injuries.
- out-of-pocket expenses costing workers \$294 million, or an average of \$1,112.

Accidents in Canada, Catalogue No. 11-612E, No. 3, is available for \$40 from Publication Sales, Statistics Canada, Ottawa, K1A 0T6; fax orders to (613) 951-1584. □

First complete report on results of literacy survey soon available

Statistics Canada is preparing to publish the first full analytical report on the results of the Survey of Literacy Skills Used in Daily Activities (LSUDA). Conducted in October 1989, the survey collected data on the reading, writing and numeracy skills of Canadians aged 15 to 69. Highlights released over the past year show that over one-third of Canadian adults (almost 7 million) either do not have sufficient literacy skills to meet most everyday requirements or else are capable of performing only simple tasks.

The upcoming analytical publication, *A Glimpse at Adult Literacy in Canada: Results of a National Survey*, delves further into the LSUDA findings. The first part of the report provides an overview of the complete survey results, and examines age, sex, education, and language, as well as economic characteristics such as income, labour market activity, occupation and industry. Results are also compared at the provincial level. The second part of the publication presents an anthology of reports from authors in different fields of study; these contributors interpret the LSUDA results as they relate to various social and economic programs and policies. The report should make a positive contribution to the current public debate about literacy and education.

A Glimpse at Adult Literacy in Canada: Results of a National Survey, Catalogue No. 89-525 is available for \$45 from Publication Sales, Statistics Canada,

Ottawa, K1A 0T6. Order by fax at (613) 951-1584. For further information, contact Gilles Montigny at (613) 951-9731. □

Guide to data sources for labour market analysts

Knowing how to find the most appropriate data for research projects quickly and efficiently is one element that distinguishes experienced analysts from beginners. With the *Labour Research Resource Manual*, researchers from the Canadian Labour Market and Productivity Centre have chosen to share the benefits of their experience in working with a wide range of labour market statistics.

The *Labour Research Resource Manual* is designed to help labour researchers find and use economic and labour market data. Its 150 pages are divided into 7 chapters, starting with major economic indicators and ending with taxation and income distribution. The data cover a broad range of research applications, from economic forecasts and occupational projections to collective agreements and social security programs.

The manual offers commentary on the uses and applicability of the information it identifies. This publication is not a mere listing of sources, and readers tempted to skip over the introductory material may miss important observations about the data. For example, in describing the usefulness of international trade statistics to labour research, the authors note that because import penetration is often cited as evidence of declining Canadian competitiveness, "Labour must be prepared to respond to calls for wage restraints based on these competitiveness arguments. Rising imports may also be claimed as proof of the need for some change in government policy" (p. 93). The

introduction also cautions the reader that because exports are not inspected as rigorously as imports – they are not subject to duties and taxes – the quality of export data is not quite as good as that for imports.

The resource manual identifies only those data sources that are published regularly and are "available on a continuing basis". This eliminates one of the most frustrating problems researchers often encounter – bibliographical references to journals or conference proceedings that are almost impossible to obtain.

The resource manual also makes recommendations. For instance, it suggests that astute labour researchers collect four journals covering current data and interpretive analysis; two Statistics Canada publications, *Perspectives* and *Canadian Economic Observer*, make this list of "must" journals. The data sources covered include both published material and electronic databases. The titles of publications are italicized, making them easy to find, and the appendices carry a full listing of depository libraries, on-line databases, government publications (by catalogue number), and Statistics Canada Reference Centres.

The *Labour Resource Research Manual* is available free of charge from Communications, the Canadian Labour Market and Productivity Centre, at (613) 234-0505. □

Report on the 1991 conference of the Association des économistes du Québec

Report by Diane Galarneau
Labour and Household Surveys Analysis Division

Over 200 delegates attended the annual conference of the Association des économistes du Québec, held in Montreal early in

May. Choosing as its theme "The great economic challenges of the end of the century", discussion at the two-day conference centered around three major sub-themes – competitiveness, economic policy, and the future of Quebec. Papers presented in workshops by 25 invited speakers covered such topics as: market globalization, international competition, firm financing, federal economic policies, monetary union and capital markets, and a Canada-Quebec common market. A brief review of the discussion of labour market issues follows.

The seminar on labour attracted speakers from the labour, government and academic communities. The debate addressed distortions in the labour market that have been responsible for the increase in unemployment from one business cycle to the next over the past several decades. The participants agreed that the job situation has deteriorated, both in quantitative and qualitative terms. However, each speaker identified different causes of the problem, and offered different solutions.

The Centrale des syndicats nationaux representative argued that government policies aimed at reducing unemployment are leading to the polarization of income between those who have jobs and those who do not.

An economist with the Quebec government agreed that unemployment and income polarization are major problems. He also pointed out that the economic expansion of the 1980s did not create as much employment as expected. Programs that tried to fill labour shortages with the long-term unemployed created congestion at the entry level of the labour market because the qualifications of the people hired did not match the job requirements. This situation led to a lack of dynamism and flexibility of the labour market, a resistance to change and little worker mobility.

A professor at Université Laval suggested that solving distortions in the labour market is a question of maximizing productivity and employment growth when resources are constrained. He argued that over the past two decades, there have been inflationary pressures and a rising trend to long-term unemployment. As long as inflation and high demand for labour co-exist, wages will continue to grow. And higher wage increases in Canada than in the United States lead to relatively lower Canadian productivity which, in the context of free trade, is harmful.

Proceedings of the conference will be available in the fall. For information, please write to Secrétariat de l'Association des économistes du Québec (ASDEQ), C.P. 869, Succursale "C", Montreal, H2L 4L6; (514) 353-0589. □

Forum to give higher profile to research on labour market policies created

Over 70 researchers and analysts recently congregated in Kingston, Ontario, to discuss labour market policies. The occasion was the inaugural conference of the Canadian Employment Research Forum (CERF), and it attracted participants from government, research institutes and academia. The agenda for the one-day conference covered quality of education, development of labour market data, job terminations and emerging employment policy issues. Results of U.S. research into unemployment insurance and education were also presented.

Organized by Employment and Immigration Canada, CERF was established to promote research directed towards helping the development and assessment of labour market policy. It was also designed to encourage debate among the "stakeholders"

in employment policy, that is, government, business, unions and academic researchers.

The next CERF conference is scheduled for late 1991. For further information, contact Mary Lou Di Millo, Employment and Immigration Canada, at (819) 994-1640; or fax (819) 953-8584. □

We welcome your views on articles and other items that have appeared in *Perspectives on Labour and Income*. Additional insights on the data are also welcome, but to be considered for publication, communications should be factual and analytical. We encourage readers to inform us about their current research projects, new publications, data sources and upcoming events relating to labour and income.

Statistics Canada reserves the right to select and edit items for publication. Correspondence, in either official language, should be addressed to: Susan Crompton, Forum and Sources Editor, *Perspectives on Labour and Income*, 5-A Jean Talon Building, Statistics Canada, Ottawa, K1A 0T6, or call (613) 951-0178.

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Key labour and income facts

The following selection of labour and income indicators is drawn from 12 sources and includes published and unpublished annual data. The first 53 indicators appear in every issue and the remainder address a different topic each time.

The latest available annual data are always shown; as results become available, the indicators are updated so that every issue contains new data. An indicator updated since the last issue is "flagged" with an asterisk.

Data sources

The indicators are derived from the following sources:

- | | |
|-----------|--|
| 1-11 & 15 | Labour Force Survey
Frequency: Monthly
Contact: Doug Drew (613) 951-4720 |
| 12-14 | Labour Market Activity Survey
Frequency: Annual
Contact: Richard Veevers (613) 951-4617 |
| 16 | Absence from Work Survey
Frequency: Annual
Contact: Denis Lefebvre (613) 951-4600 |
| 17 | Workers' Compensation statistics
Frequency: Annual
Contact: Joanne Proulx (613) 951-4040 |
| 18 | Help-wanted Index
Frequency: Monthly
Contact: André Picard (613) 951-4045 |
| 19-21 | Unemployment Insurance statistics
Frequency: Monthly
Contact: André Picard (613) 951-4045 |

- | | |
|-------|---|
| 22-29 | Survey of Employment, Payrolls and Hours
Frequency: Monthly
Contact: Howard Krebs (613) 951-4063 |
| 30-32 | Labour Canada, Major Wage Settlements
Frequency: Quarterly
Contact: Sulaiman Khan (819) 953-4234 |
| 33-35 | Labour Income (Revenue Canada-Taxation-based statistics, Survey of Employment, Payrolls and Hours and other surveys)
Frequency: Quarterly
Contact: Ed Bunko (613) 951-4048 |
| 36-46 | Survey of Consumer Finances
Frequency: Annual
Contact: Kevin Bishop (613) 951-2211 |
| 47-53 | Household Facilities and Equipment Survey
Frequency: Annual
Contact: Penny Barclay (613) 951-4634 |
| 54-55 | Small Area and Administrative Data
Frequency: Annual
Contact: Customer Services (613) 951-9720 |

Notes on the method of deriving certain indicators are given at the end of the table.

Additional data

The table provides at the most 2 years of data for each indicator. A longer time series (generally 10 years) for this set of indicators can be obtained on request, on paper or diskette, at a cost of \$50. (A more extensive explanation of the indicators is also available.) This 10-year data set is updated annually in April. Contact Gilles Myre at (613) 951-4627.

Key labour and income facts

No.	Unit	Year	Canada	Nfld.	P.E.I.	N.S.	N.B.
Labour market							
1 Labour force	'000	1989	13,503	238	63	414	325
		1990	13,681	242	65	424	331
Change	%		1.3	1.6	2.4	2.3	1.7
2 Participation rate	%	1989	67.0	55.7	65.0	61.2	59.5
		1990	67.0	56.0	66.0	62.1	59.8
3 Employed	'000	1989	12,486	201	54	373	284
		1990	12,572	201	55	379	291
Change	%		0.7	-	1.5	1.6	2.2
4 Proportion of employed working part time	%	1989	15.1	11.5	15.7	16.0	14.9
		1990	15.4	11.3	15.5	15.8	14.6
5 Proportion of part-timers wanting full-time work	%	1989	22.2	55.1	36.1	31.5	37.5
		1990	22.4	52.3	35.5	33.1	37.9
6 Unemployed	'000	1989	1,018	38	9	41	41
		1990	1,109	41	10	45	40
Change	%		9.0	10.1	7.9	8.8	-1.4
7 Official unemployment rate	%	1989	7.5	15.8	14.1	9.9	12.5
		1990	8.1	17.1	14.9	10.5	12.1
Alternative measures of unemployment							
8 Unemployed 14 or more weeks as a proportion of the labour force	%	1989	2.9	6.8	5.3	3.8	4.9
		1990	3.1	8.3	5.6	4.2	4.6
9 Unemployment rate:							
- of persons heading families with children under age 16	%	1989	6.8	15.6	14.2	9.2	11.8
		1990	7.3	16.5	15.3	9.3	11.2
- excluding full-time students	%	1989	7.4	15.8	14.6	9.8	12.4
		1990	8.0	17.2	15.4	10.5	12.0
- including full-time members of the Canadian Armed Forces	%	1989	7.5	15.7	13.9	9.6	12.3
		1990	8.1	17.0	14.7	10.2	11.9
- of the full-time labour force	%	1989	9.0	18.6	17.4	12.1	15.0
		1990	9.6	19.7	18.2	12.8	14.6
- of the part-time labour force	%	1989	9.7	15.8	8.2	12.3	14.4
		1990	10.1	15.6	7.6	12.9	13.5
- including persons on the margins of the labour force	%	1989	8.2	18.9	16.1	10.8	14.1
		1990	8.7	20.3	16.4	11.3	14.0
10 Underutilization rate based on hours lost through unemployment and underemployment	%	1989	9.5	19.3	17.8	12.8	15.6
		1990	10.2	20.3	18.5	13.5	15.4
11 Proportion unemployed 6 months or longer	%	1989	20.1	21.3	14.1	18.0	19.2
		1990	18.4	26.8	15.8	18.5	17.6

See notes at end of table.

Key labour and income facts

Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Year	Unit	No.
3,343	5,214	538	482	1,308	1,578	..	..	1989	'000	1
3,399	5,268	544	483	1,324	1,601	..	..	1990		
1.7	1.0	1.1	0.2	1.2	1.5	..	..		%
64.0	69.8	67.0	66.2	72.4	66.8	..	..	1989	%	2
64.3	69.4	67.6	66.8	72.1	66.0	..	..	1990		
3,031	4,949	498	446	1,214	1,435	..	..	1989	'000	3
3,055	4,937	505	449	1,231	1,469	..	..	1990		
0.8	-0.3	1.4	0.7	1.4	2.4	..	..		%
13.5	15.5	17.2	16.6	15.3	16.2	..	..	1989	%	4
13.8	15.8	18.2	17.1	15.0	16.7	..	..	1990		
31.8	13.5	21.9	27.9	19.3	25.8	..	..	1989	%	5
33.1	14.5	21.8	27.5	19.3	21.4	..	..	1990		
311	264	41	36	94	144	..	..	1989	'000	6
345	331	39	34	93	132	..	..	1990		
10.7	25.1	-2.9	-5.7	-0.9	-8.0	..	..		%
9.3	5.1	7.5	7.4	7.2	9.1	..	..	1989	%	7
10.1	6.3	7.2	7.0	7.0	8.3	..	..	1990		
4.3	1.5	3.0	3.1	2.5	3.6	..	..	1989	%	8
4.5	2.0	2.8	2.5	2.2	2.9	..	..	1990		
										9
7.8	4.7	6.0	7.4	6.5	8.3	..	..	1989	%	
8.6	5.6	5.9	6.7	6.5	7.7	..	..	1990		
9.3	4.9	7.3	7.3	7.0	8.9	..	..	1989	%	
10.1	6.0	6.9	6.9	6.8	8.1	..	..	1990		
9.3	5.0	7.5	7.4	7.1	9.0	..	..	1989	%	
10.1	6.2	7.2	7.0	7.0	8.2	..	..	1990		
11.3	5.8	9.2	9.6	8.3	10.8	..	..	1989	%	
12.2	7.1	9.1	9.1	8.1	9.8	..	..	1990		
10.7	8.0	9.8	9.7	9.9	12.3	..	..	1989	%	
11.8	9.1	8.9	9.5	10.5	10.4	..	..	1990		
10.5	5.3	8.0	8.0	7.5	9.5	..	..	1989	%	
11.3	6.5	7.7	7.5	7.3	8.6	..	..	1990		
11.7	6.2	9.7	10.2	8.9	11.3	..	..	1989	%	10
12.6	7.7	9.7	9.8	8.7	10.4	..	..	1990		
27.0	13.2	20.6	20.4	17.4	20.6	..	..	1989	%	11
23.7	13.8	19.3	16.7	15.3	16.5	..	..	1990		

See notes at end of table.

Key labour and income facts

No.		Unit	Year	Canada	Nfld.	P.E.I.	N.S.	N.B.
Other labour market indicators								
12	Employed at some time in the year, men, age 16 to 69	'000	1987	7,584	152	36	235	191
	– as proportion of male population age 16 to 69	%		86.5	80.9	87.8	82.2	81.6
		'000	1988	7,688	157	37	241	195
		%		86.6	82.6	88.1	83.7	82.3
	Employed at some time in the year, women, age 16 to 69	'000	1987	6,042	110	30	191	153
	– as proportion of female population age 16 to 69	%		67.1	57.9	71.4	63.0	63.0
		'000	1988	6,337	120	32	197	164
		%		69.7	62.2	74.4	64.6	66.9
13	Unemployed at some time in the year, men, age 16 to 69	'000	1987	1,497	59	11	59	59
	– as proportion of male population age 16 to 69	%		17.1	31.4	26.8	20.6	25.2
		'000	1988	1,366	51	11	89	55
		%		15.4	26.8	26.2	17.0	23.2
	Unemployed at some time in the year, women, age 16 to 69	'000	1987	1,345	46	9	55	48
	– as proportion of female population age 16 to 69	%		14.9	24.2	21.4	18.2	19.8
		'000	1988	1,247	44	10	49	43
		%		13.7	22.8	23.3	16.1	17.6
14	Full-time, full-year male paid workers	'000	1987	4,035	55	14	115	89
			1988	4,017	63	13	121	87
	Full-time, full-year female paid workers	'000	1987	2,528	36	11	74	52
			1988	2,597	35	11	76	60
15	Days lost per full-time worker per year through illness or for personal reasons	days	1989	9.4	9.6	8.1	8.6	9.6
			1990	9.4	10.1	7.3	9.1	9.3
16	Proportion of paid workers absent two or more consecutive weeks because of illness or accident	%	1988	6.4	5.1	5.7	4.7	6.0
			1989	6.7	6.2	5.2	5.4	7.4
17	Workers receiving workers' compensation for time-loss injuries	'000	1988	618	10	2	11	12
	Change	%	1989	621	11	2	14	13
				0.5	6.2	0.6	23.9	8.0
18	Help-wanted index (1981 = 100)		1989	152	196			
			1990	115	164			

See notes at end of table.

Key labour and income facts

Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Year	Unit	No.
1,921	2,886	305	280	718	859	..	..	1987	'000	12
83.5	89.2	88.2	87.5	88.3	85.6	..	..		%
1,962	2,909	303	277	729	877	..	..	1988	'000	
84.7	88.4	87.3	87.4	88.5	85.4	..	..		%
1,434	2,367	264	219	592	682	..	..	1987	'000	
60.2	71.2	72.7	68.7	73.4	66.7	..	..		%
1,542	2,462	257	228	621	716	..	..	1988	'000	
64.4	72.9	72.2	71.9	75.7	68.5	..	..		%
434	432	57	42	150	193	..	..	1987	'000	13
18.9	13.3	16.5	13.1	18.5	19.2	..	..		%
400	404	53	43	128	172	..	..	1988	'000	
17.3	12.3	15.3	13.6	15.5	16.7	..	..		%
375	424	51	40	127	171	..	..	1987	'000	
15.7	12.8	14.0	12.5	15.7	16.7	..	..		%
362	361	51	39	114	173	..	..	1988	'000	
15.1	10.7	14.3	12.3	13.9	16.6	..	..		%
1,028	1,666	148	128	370	423	..	..	1987	'000	14
1,014	1,661	153	123	356	425	..	..	1988		
610	1,052	107	81	239	265	..	..	1987	'000	
638	1,087	104	79	248	259	..	..	1988		
10.2	9.6	8.8	8.6	8.2	8.4	..	..	1989	days	15
10.5	9.5	9.0	8.0	7.3	8.5	..	..	1990		
8.1	6.2	6.2	5.2	5.5	5.5	..	..	1988	%	16
7.7	6.8	5.0	5.4	5.1	6.4	..	..	1989		
218	208	23	15	43	73	..	1	1988	'000	17
219	201	22	14	45	80	..	1	1989		
0.3	-3.6	-4.4	-6.7	3.3	8.4	..	-3.7		%	
173	167	90			128	..	..	1989		18
129	111	80			117	..	..	1990		

See notes at end of table.

Key labour and income facts

No.	Unit	Year	Canada	Nfld.	P.E.I.	N.S.	N.B.
Unemployment insurance							
19	Total beneficiaries	'000	1988 1,015	71	13	50	57
			1989 1,030	76	14	53	58
	Change	%	1.5	6.6	6.8	5.3	0.4
20	Total beneficiaries as a proportion of contributors	%	1988 7.9	28.7	21.2	12.4	17.6
			1989 7.8	29.9	21.7	12.7	17.1
21	Regular beneficiaries without reported earnings	'000	1988 780	58	10	38	47
			1989 785	61	10	39	47
	Change	%	0.6	5.7	5.8	1.6	-1.1
Earnings (including overtime) and hours							
22	Average weekly earnings in current dollars	\$	1989 486.87	465.80	400.82	432.86	442.80
			1990 512.79	484.61	419.63	458.50	463.45
	Change	%	5.3	4.0	4.7	5.9	4.7
23	Average weekly earnings in 1981 dollars	\$	1989 322.43	324.83	283.06	295.47	299.59
			1990 324.14	323.94	282.20	297.92	299.77
	Change	%	0.5	-0.3	-0.3	0.8	0.1
24	Average weekly earnings of salaried employees in current dollars	\$	1989 598.87	559.86	522.94	537.24	552.16
			1990 635.97	586.43	548.55	580.85	580.34
	Change	%	6.2	4.7	4.9	8.1	5.1
25	Average weekly earnings of salaried employees in 1981 dollars	\$	1989 396.60	390.42	369.31	366.72	373.59
			1990 402.00	392.00	368.90	377.42	375.38
	Change	%	1.4	0.4	-0.2	2.9	0.5
26	Average weekly earnings of hourly paid employees in current dollars	\$	1989 388.20	363.16	264.60	341.66	362.48
			1990 403.41	372.40	280.59	357.91	371.54
	Change	%	3.9	2.5	6.0	4.8	2.5
27	Average weekly earnings of hourly paid employees in 1981 dollars	\$	1989 257.09	253.25	186.86	233.22	245.25
			1990 255.00	248.93	188.70	232.56	240.32
	Change	%	-0.8	-1.7	1.0	-0.3	-2.0
28	Average weekly hours of hourly paid employees	hrs	1989 31.8	34.8	31.7	32.7	34.1
			1990 31.5	34.6	31.5	32.2	33.7
29	Average weekly overtime hours of hourly paid employees	hrs	1989 1.2	1.6	0.4	0.8	1.0
			1990 1.1	1.5	0.5	0.8	0.9
Major wage settlements							
30	Number of agreements		1989 438	7	4	15	5
			1990 486	11	1	7	17
31	Number of employees	'000	1989 983	11	3	19	12
			1990 1,129	18	-	15	28
32	Increase in base rate on annual basis	%	1989 5.3	5.7	4.7	5.5	4.5
			1990 5.8	7.5	5.8	6.3	6.0

See notes at end of table.

Key labour and income facts

Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Year	Unit	No.
323	216	35	29	78	139	2	2	1988	'000	19
337	214	35	29	78	134	2	2	1989		
4.3	-1.2	2.1	-0.7	-0.8	-3.4	3.6	-1.9		%	
10.2	4.2	7.1	7.5	6.5	9.9	9.8	4.8	1988	%	20
10.4	4.0	7.2	7.5	6.3	9.0	-4.8	-8.8	1989		
259	151	26	22	60	106	1	1	1988	'000	21
270	147	26	22	59	101	1	1	1989		
4.4	-2.7	1.2	-0.5	-1.4	-5.8	-2.5	-8.3		%	
472.82	509.08	445.08	425.99	484.47	491.63	585.91	663.86	1989	\$	22
502.02	535.78	462.78	445.80	509.86	515.91	612.22	705.48	1990		
6.2	5.2	4.0	4.7	5.2	4.9	4.5	6.3		%	
312.71	326.33	299.11	289.59	339.98	342.60	..	..	1989	\$	23
318.54	327.89	297.23	290.42	338.33	340.98	..	..	1990		
1.9	0.5	-0.6	0.3	-0.5	-0.5	..	..		%
564.69	631.12	562.52	558.45	617.83	594.35	713.95	728.63	1989	\$	24
602.37	670.17	590.77	581.86	655.15	628.93	747.27	776.47	1990		
6.7	6.2	5.0	4.2	6.0	5.8	4.7	6.6		%	
373.47	404.56	378.04	379.06	433.56	414.18	..	..	1989	\$	25
382.21	410.14	379.43	379.74	434.74	415.68	..	..	1990		
2.3	1.4	0.4	-0.2	0.3	0.4	..	..		%
387.87	403.25	345.85	309.83	356.00	412.73	439.74	568.71	1989	\$	26
406.93	415.59	356.20	327.33	373.65	432.05	446.27	610.01	1990		
4.9	3.1	3.0	5.6	5.0	4.7	1.5	7.3		%	
256.53	258.49	232.43	210.63	249.82	287.62	..	..	1989	\$	27
258.20	254.34	228.77	213.24	247.94	285.56	..	..	1990		
0.7	-1.6	-1.6	1.2	-0.8	-0.7	..	..		%
32.6	32.0	31.2	28.8	30.5	30.5	32.1	33.8	1989	hrs	28
32.4	31.4	31.2	28.7	30.2	30.3	35.2	35.5	1990		
1.0	1.3	0.9	0.8	1.5	1.1	1.9	3.4	1989	hrs	29
0.9	1.1	0.9	0.9	1.6	1.1	2.2	3.8	1990		
37	155	7	16	51	49	..	..	1989		30
94	201	14	8	55	29	..	..	1990		
209	237	10	21	83	106	..	..	1989	'000	31
395	393	14	20	103	29	..	..	1990		
5.3	6.4	4.6	2.9	3.9	7.0	..	..	1989	%	32
4.8	6.8	5.6	4.0	5.6	6.9	..	..	1990		

See notes at end of table.

Key labour and income facts

No.		Unit	Year	Canada	Nfld.	P.E.I.	N.S.	N.B.
Labour income								
33	Labour income in current dollars	\$ million	1988	325.2	4.5	1.0	8.2	6.3
			1989	354.9	4.8	1.0	8.8	6.9
	Change	%		9.1	6.8	7.7	7.2	8.2
34	Labour income per employee in current dollars	\$	1988	30,327	26,312	22,360	25,594	25,402
			1989	32,326	26,715	23,481	26,798	27,007
	Change	%		6.6	1.5	5.0	4.7	6.3
35	Labour income per employee in 1981 dollars	\$	1988	21,090	18,998	16,393	18,256	17,990
			1989	21,408	18,630	16,583	18,292	18,272
	Change	%		1.5	-1.9	1.2	0.2	1.6
36	Net income from self-employment as a proportion of money income	%	1988	5.3	3.5	7.8	5.7	4.3
			1989	5.8	3.9	9.1	5.9	4.2
Earnings of full-time, full-year workers								
37	Average earnings of men working full time, full year	\$	1988	33,600	27,200	23,600	30,500	29,100
			1989	35,100	30,600	25,900	31,900	31,200
	Change	%		4.5	12.6	9.8	4.6	7.2
38	Average earnings of women working full time, full year	\$	1988	21,900	20,400	16,900	19,600	20,200
			1989	23,100	21,700	19,800	21,100	19,400
	Change	%		5.4	6.1	16.7	7.6	-3.8
39	Ratio of female-to-male earnings	%	1988	65.3	75.1	71.7	64.4	69.5
			1989	65.8	70.8	76.2	66.2	62.3
Family income								
*40	Average family income	\$	1988	46,200	36,100	34,500	39,700	37,300
			1989	50,100	39,600	38,700	43,100	40,700
*41	Median family income	\$	1988	41,200	32,900	30,700	36,400	33,300
			1989	44,500	35,700	34,500	37,600	36,300
*42	Average income of unattached individuals	\$	1988	19,600	17,000	14,400	16,000	16,100
			1989	21,100	19,000	14,400	17,700	17,200
*43	Median income of unattached individuals	\$	1988	15,000	12,900	12,000	11,300	12,100
			1989	16,600	14,700	11,700	12,400	13,000
*44	Average family taxes	\$	1988	8,600	5,100	4,700	6,700	5,800
			1989	9,600	6,200	5,900	7,400	6,600
*45	Average family income after tax	\$	1988	37,600	30,900	29,800	33,000	31,500
			1989	40,400	33,500	32,800	35,700	34,000

See notes at end of table.

Key labour and income facts

Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Year	Unit	No.
77.5	140.3	11.1	8.6	30.0	35.9	.4	1.0	1988	\$ million	33
83.2	154.7	11.7	9.0	32.6	40.3	.4	1.0	1989		
7.3	10.2	5.6	4.3	8.5	12.3	7.0	6.2			
29,183	32,434	26,601	24,969	29,651	30,336	1988	\$	34
30,831	35,124	27,749	26,470	31,101	31,987	..	..	1989
5.7	8.3	4.3	6.0	4.9	5.4	..	..	
20,126	22,004	18,720	17,721	21,675	22,095	1988	\$	35
20,391	22,516	18,648	17,995	21,825	22,291	..	..	1989
1.3	2.3	-0.4	1.5	0.7	0.9	..	..	
4.4	4.9	7.4	9.9	6.8	5.7	1988	%	36
4.4	6.4	5.7	10.8	5.6	5.9	..	..	1989
31,700	35,900	29,700	28,400	33,800	34,500	1988	\$	37
34,000	37,400	31,600	27,900	34,400	35,600	..	..	1989
7.1	4.2	6.3	-1.8	1.8	3.3	..	..	
20,900	23,300	20,200	19,200	22,100	21,300	1988	\$	38
21,200	25,200	20,700	20,400	22,800	22,600	..	..	1989
1.3	8.4	2.6	6.0	3.4	6.2	..	..	
65.9	64.8	67.9	67.5	65.3	61.8	1988	%	39
62.4	67.4	65.6	72.9	66.3	63.6	..	..	1989
41,300	52,800	43,100	40,400	46,300	45,300	1988	\$	40
44,900	57,300	46,600	43,000	49,700	49,400	..	..	1989
36,900	47,300	37,400	35,400	41,700	42,000	1988	\$	41
40,200	50,500	41,300	38,100	44,900	46,000	..	..	1989
17,400	21,700	17,100	17,100	20,500	21,000	1988	\$	42
18,300	24,100	19,200	18,700	20,900	22,300	..	..	1989
12,100	17,400	13,800	13,200	15,700	17,300	1988	\$	43
13,700	20,400	14,900	14,100	16,600	18,600	..	..	1989
7,900	10,100	7,700	7,000	8,300	8,100	1988	\$	44
8,900	11,400	8,600	7,700	9,200	9,300	..	..	1989
33,500	42,700	35,400	33,300	38,000	37,200	1988	\$	45
36,000	45,900	38,000	35,300	40,500	40,100	..	..	1989

See notes at end of table.

Key labour and income facts

No.	Unit	Year	Canada	Nfld.	P.E.I.	N.S.	N.B.
46	Proportion below the low income cut-off (1978 base):						
- families	%	1988	10.5	15.5	10.0	10.8	12.6
		1989	9.6	12.8	9.0	11.4	11.9
- unattached individuals	%	1988	33.1	35.5	33.2	39.4	35.7
		1989	30.5	32.0	35.1	34.7	36.3
- persons (population)	%	1988	13.1	16.7	12.3	13.4	14.5
		1989	12.2	14.5	11.6	13.4	13.8
- children (less than 16 years)	%	1988	15.4	20.7	12.6	15.2	18.3
		1989	14.6	19.7	13.9	16.6	17.6
- elderly (65 years and over)	%	1988	17.2	19.2	17.5	16.9	15.0
		1989	15.9	13.8	14.6	13.8	12.8
Households and dwellings							
*47	Average household income						
	\$	1988	40,700	34,200	31,100	35,400	34,300
		1989	43,800	37,500	34,300	37,700	36,800
48	Proportion of households with:						
- VCRs	%	1989	58.8	59.9	50.0	62.1	57.0
		1990	66.3	67.6	62.2	66.7	64.0
- microwaves	%	1989	63.4	52.1	47.7	62.5	59.9
		1990	68.2	56.6	57.8	67.9	66.8
- two or more automobiles	%	1989	25.0	12.6	22.7	21.0	18.6
		1990	24.7	16.2	26.7	19.8	21.5
- vans and trucks	%	1989	25.5	32.3	31.8	28.2	34.3
		1990	23.4	32.4	31.1	23.9	31.6
- air conditioners	%	1989	24.6	...	...	2.6	5.8
		1990	24.4	...	...	3.5	5.7
49	Proportion of owner-occupied dwellings						
	%	1989	63.3	79.6	75.0	71.5	75.2
		1990	63.7	79.2	71.1	72.0	75.3
50	Proportion of all owner-occupied dwellings that are mortgage free						
	%	1989	50.6	69.9	54.5	56.6	59.3
		1990	51.1	70.8	59.4	57.6	58.1
51	Number of occupied dwellings in need of repair						
	'000	1989	2,369	52	14	94	79
		1990	2,561	54	17	112	81
52	Dwellings in need of repair as a proportion of all occupied dwellings						
	%	1989	25.0	31.1	31.8	30.4	32.6
		1990	26.6	31.3	37.7	35.2	32.8
53	Median rent-to-income ratio						
	%	1989	21	17	23	21	19
		1990	20	17	25	23	19

See notes at end of table.

Key labour and income facts

Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Year	Unit	No.
										46
13.5	7.5	11.1	13.6	10.7	10.1	..	..	1988	%	
11.4	7.0	11.0	12.6	11.0	9.7	..	..	1989		
42.7	26.9	33.5	29.3	30.8	30.6	..	..	1988	%	
41.0	23.5	30.0	30.4	30.7	25.2	..	..	1989		
16.8	9.5	14.8	16.8	13.8	13.2	..	..	1988	%	
15.1	8.8	14.5	16.1	13.9	11.7	..	..	1989		
17.2	11.9	19.7	22.6	16.9	15.2	..	..	1988	%	
15.2	11.3	21.5	22.3	16.8	13.7	..	..	1989		
25.2	12.6	16.0	13.4	15.6	18.4	..	..	1988	%	
30.7	9.7	11.0	10.7	14.4	12.5	..	..	1989		
										47
36,000	46,900	37,000	35,100	41,200	39,100	..	..	1988	\$	
39,200	50,600	40,000	37,100	43,800	41,800	..	..	1989		
										48
54.4	62.1	56.7	53.4	64.0	57.3	..	..	1989	%	
63.2	69.0	63.1	60.6	71.6	64.0	..	..	1990		
59.6	64.5	65.8	71.2	71.8	62.2	..	..	1989	%	
65.5	68.2	68.3	74.9	76.9	68.3	..	..	1990		
19.9	29.3	21.9	24.6	29.4	25.7	..	..	1989	%	
21.6	26.5	22.2	25.1	29.7	26.7	..	..	1990		
15.6	21.7	32.1	44.1	41.6	34.0	..	..	1989	%	
13.8	20.5	29.1	37.2	37.7	32.3	..	..	1990		
14.7	43.8	43.9	31.0	8.6	7.4	..	..	1989	%	
13.3	44.9	43.8	32.1	6.9	6.1	..	..	1990		
54.8	64.6	67.4	71.8	64.6	65.2	..	..	1989	%	49
55.2	65.6	67.8	70.7	65.8	64.2	..	..	1990		
46.9	49.4	55.4	61.1	48.3	50.2	..	..	1989	%	50
46.5	50.6	56.3	58.9	47.2	52.0	..	..	1990		
572	817	113	101	238	287	..	..	1989	'000	51
613	910	112	112	261	290	..	..	1990		
22.8	24.0	29.5	28.2	27.5	24.1	..	..	1989	%	52
24.2	26.2	28.9	31.3	30.0	23.9	..	..	1990		
20	21	21	22	21	22	..	..	1989	%	53
19	20	20	21	20	23	..	..	1990		

See notes at end of table.

Key labour and income facts

No.	Unit	Year	Canada	Nfld.	P.E.I.	N.S.	N.B.
*54 Labour force income profile							
Number of taxfilers	'000	1989	17,903	361	83	589	479
Income:							
Number reporting	'000	1989	17,849	360	83	588	478
Amount	\$ million	1989	417,810	6,244	1,508	11,741	8,895
Median	\$	1989	18,100	12,800	14,500	15,600	14,400
Canadian index		1989	100.0	70.7	80.1	86.2	79.6
Labour force income:							
Number reporting	'000	1989	14,108	288	68	452	366
Amount	\$ million	1989	334,074	5,275	1,211	9,329	7,197
Employment income:							
Number reporting	'000	1989	13,907	278	67	444	359
Amount	\$ million	1989	323,421	4,495	1,070	8,797	6,594
Median	\$	1989	18,600	10,200	11,500	15,800	13,800
Canadian index	%	1989	100.0	54.8	61.8	84.9	74.2
Self-employment income:							
Number reporting	'000	1989	1,823	32	12	53	35
Amount	\$ million	1989	20,813	229	111	656	347
Unemployment insurance benefits:							
Number reporting	'000	1989	2,817	143	27	132	126
Amount	\$ million	1989	10,654	779	141	532	603
U.I. dependency ratio	%	1989	3.29	17.34	13.21	6.05	9.15
Canadian index	%	1989	100.0	527.1	401.5	183.9	278.1
*55 Economic dependency profile							
Transfer payments:							
Amount	\$ million	1989	49,494	1,401	311	1,932	1,613
Employment income	\$ million	1989	323,421	4,495	1,070	8,797	6,594
Economic dependency ratio (EDR)	%	1989	15.30	31.17	29.02	21.97	24.46
Canadian index	%	1989	100.0	203.7	189.7	143.6	159.9
Unemployment insurance benefits:							
Amount	\$ million	1989	10,654	779	141	532	603
Contribution to EDR	%	1989	3.29	17.34	13.21	6.05	9.15
Family allowance benefits:							
Amount	\$ million	1989	2,521	64	14	86	73
Contribution to EDR	%	1989	0.78	1.42	1.27	0.98	1.11
Federal sales tax credits:							
Amount	\$ million	1989	580	17	3	23	20
Contribution to EDR	%	1989	0.18	0.38	0.30	0.26	0.30
Child tax credit benefits:							
Amount	\$ million	1989	2,094	68	14	81	73
Contribution to EDR	%	1989	0.65	1.51	1.33	0.92	1.10
Old age security benefits:							
Amount	\$ million	1989	8,678	144	42	297	231
Contribution to EDR	%	1989	2.68	3.21	3.90	3.38	3.50
CPP/QPP benefits:							
Amount	\$ million	1989	10,620	154	43	382	271
Contribution to EDR	%	1989	3.28	3.42	4.00	4.34	4.11
Other pension benefits:							
Amount	\$ million	1989	14,347	175	54	531	343
Contribution to EDR	\$	1989	4.44	3.90	5.01	6.04	5.19

Key labour and income facts

Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Year	Unit	No.
4,567	6,719	749	624	1,593	2,093	17	29	1989	'000	54
4,553	6,697	746	622	1,589	2,088	17	29	1989	'000	
94,861	177,048	14,837	12,508	38,082	50,854	436	796	1989	\$ million	
16,600	20,500	15,400	15,600	18,500	18,800	22,100	20,500	1989	\$	
91.7	113.3	85.1	86.2	102.2	103.9	122.1	113.3	1989	%	
3,487	5,404	558	488	1,330	1,625	15	26	1989	'000	
77,172	141,750	11,420	9,322	30,871	39,393	394	740	1989	\$ million	
3,422	5,357	548	482	1,313	1,597	15	26	1989	'000	
73,708	139,460	11,066	9,028	30,063	38,046	374	720	1989	\$ million	
17,900	20,900	16,200	14,400	18,300	19,100	21,400	21,800	1989	\$	
96.2	112.4	87.1	77.4	98.4	102.7	115.1	117.2	1989	%	
334	649	101	137	231	236	2	2	1989	'000	
4,211	8,552	862	1,160	1,879	2,776	16	14	1989	\$ million	
874	746	103	83	224	350	4	5	1989	'000	
3,464	2,290	354	295	808	1,347	20	20	1989	\$ million	
4.70	1.64	3.20	3.27	2.69	3.54	5.23	2.84	1989	%	
142.9	49.8	97.3	99.4	81.8	107.6	159.0	86.3	1989	%	
										55
12,321	17,564	2,125	1,810	3,748	6,585	37	48	1989	\$ million	
73,708	139,460	11,066	9,028	30,063	38,046	374	720	1989	\$ million	
16.72	12.59	19.20	20.05	12.47	17.31	9.82	6.60	1989	%	
109.3	82.3	125.5	131.0	81.5	113.1	64.2	43.1	1989	%	
3,464	2,290	354	295	808	1,347	20	20	1989	\$ million	
4.70	1.64	3.20	3.27	2.69	3.54	5.23	2.84	1989	%	
621	894	110	108	258	284	3	8	1989	\$ million	
0.84	0.64	0.99	1.19	0.86	0.75	0.75	1.06	1989	%	
168	179	30	25	50	63	--	1	1989	\$ million	
0.23	0.13	0.28	0.28	0.17	0.17	0.12	0.16	1989	%	
552	616	111	116	224	229	2	7	1989	\$ million	
0.75	0.44	1.00	1.28	0.75	0.60	0.58	1.04	1989	%	
2,093	3,257	470	386	601	1,152	2	3	1989	\$ million	
2.84	2.34	4.25	4.27	2.00	3.03	0.64	0.39	1989	%	
2,513	4,270	472	401	739	1,370	4	3	1989	\$ million	
3.41	3.06	4.26	4.44	2.46	3.60	1.01	0.41	1989	%	
2,909	6,060	578	480	1,069	2,139	6	5	1989	\$ million	
3.95	4.35	5.22	5.31	3.56	5.62	1.49	0.71	1989	%	

Key labour and income facts

Notes and definitions

No.

- 1 Persons aged 15 and over who are employed or unemployed.
- 2 Labour force as a proportion of the population aged 15 and over.
- 4 Persons who usually work less than 30 hours per week.
- 7 Unemployed as a proportion of the labour force.
- 8 This rate, and rates shown as Indicators 9 and 10, are described in *The Labour Force* (71-001), February 1987.
- 9 The full-time labour force includes persons working full time, those working part time involuntarily and unemployed persons seeking full-time work.

The part-time labour force includes persons working part time voluntarily and unemployed persons seeking part-time work.

On the margins of the labour force includes persons not looking for work because they believe none is available or because they are waiting for recall or for replies from employers.

No.

- 10 The rate shows hours lost through unemployment (unemployed multiplied by average actual weekly hours) and through underemployment (that is, short-time work schedules and involuntary part-time employment) as a proportion of hours worked plus hours lost.
- 30 Data are for agreements involving bargaining units of 500 or more employees. Canada figures include workers covered by federal labour legislation plus agreements involving workers in more than one province.
- 33 Labour income comprises gross wages and salaries (including directors' fees, bonuses, commissions, gratuities, taxable allowances and retroactive pay) and supplementary labour income (payments made by employers for the benefit of employees, including contributions to health and welfare schemes, pension plans, workers' compensation and unemployment insurance).
- 34 Labour income per employee is calculated using LFS estimates of paid workers excluding those absent without pay.
- 46 For an explanation of the methodology underlying the low income cut-off, see *Income Distributions by Size in Canada* (13-207).
- 54-55 Data are derived from tax returns filed in the spring of the year following the reference year. The mailing address at the time of filing determines the province.

In the works

Here are some of the topics to be featured in upcoming issues of Perspectives on Labour and Income.

■ **Occupational unemployment disparities**

Even in good economic times, some occupations have high unemployment rates. Conversely, even in recessions other occupations maintain very low unemployment rates. This looks at the occupational segmentation of the labour market and provides a useful perspective on Canadian unemployment.

■ **Single-industry towns**

Many remote communities depend upon one main industry, such as fishing, forestry or mining. This study examines, over the 1971 to 1986 period, three groups of single-industry towns.

■ **Non-standard work**

The traditional full-time, year-round, permanent, paid job is declining in importance. Part-time work, self-employment, multiple jobholding, and other non-standard forms of work are becoming more prevalent, but relatively little is known about them. The author uses 1989 General Social Survey data to explore these alternative employment relationships.

■ **Lifetime learning**

During the 1980s an increasing number of adults, particularly women, returned to school to upgrade or expand their skills in order to meet the changing demands of today's labour market.

■ **Women and RRSPs**

RRSP savings by Canadian women increased dramatically during the 1980s through both personal contributions and deposits made by their spouses. Why the percentage of women participating in RRSPs has grown so rapidly and to what extent women have benefited from spousal RRSPs are examined in the context of changing legislation and increasing family income.

■ **Family income and early retirement**

Higher than average family income does not necessarily result in earlier than average retirement. The incidence of early retirement among men aged 55 to 64 is examined.

■ **Non-wage labour income**

Although constant-dollar wages and salaries have grown only marginally since the late 1970s, supplementary labour income has almost doubled. The various components of labour income over the last two decades are examined to determine the causes of this growth.

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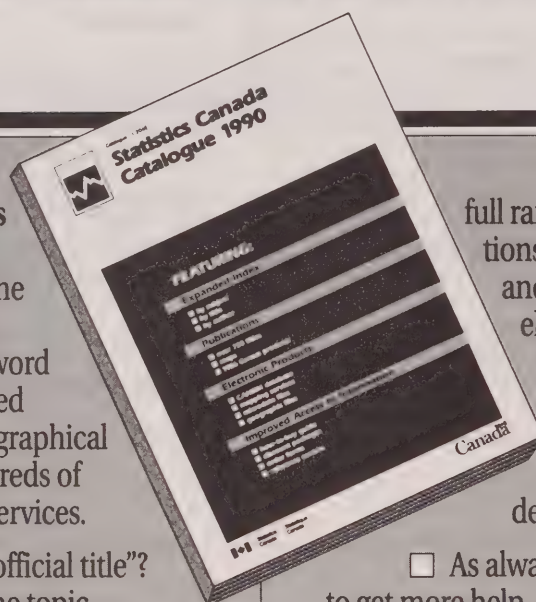
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Every day you read news items about immigration, aging of the population or fertility. Unfortunately, these stories are often fragmented, making it difficult to get a complete picture of the demographic situation in Canada.

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WINTER 1991

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- INSECURE OCCUPATIONS
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Symbols

The following standard symbols are used in Statistics Canada publications:

- .. figures not available
- ... figures not appropriate or not applicable
- nil or zero
- amount too small to be expressed
- p preliminary figures
- r revised figures
- x confidential to meet secrecy requirements of the Statistics Act

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Forum

From the editor

■ Summary statistical measures are essential to meaningful public discourse about important social and economic issues. Without the gross domestic product (GDP) and the unemployment rate, it would be almost impossible to discuss the growth of the economy and the state of the labour market; without the consumer (CPI) and industrial price indexes, it would be almost impossible to talk about the rise or fall of the general level of prices. By compressing complex calculations into a figure comprehensible to everyone, summary measures allow people to get on with the business of debating issues and not statistics.

Since they are so useful, almost every country has summary statistics of national indicators like general economic conditions, prices and unemployment; furthermore, international agreements have standardized the composition and calculation of these measures. This allows the performance of one country to be compared with that of another with a fair degree of confidence.

If summary measures allow public participation in solving social and economic problems, then among the most important should be the one that identifies "the poor." But defining that segment of the population whose income is inadequate is altogether more difficult than constructing the GDP, the CPI or the unemployment rate. One of the principal reasons is that there is so much disagreement about what it should measure and how it should do the measuring. Just as

most countries are unable to find unanimity among their own statisticians, the international community cannot achieve a consensus either. So even if a country like Canada does develop a low-income statistic, it cannot be compared with measures produced by other nations. In fact, very few countries have governmentally endorsed measures of low income; of those that do, none use the same one as Statistics Canada.

Statistics Canada has long taken the position that "poverty" is simply too subjective to be measured statistically. But the Agency does recognize the need for a summary measure in this area. As a result, since the 1960s Statistics Canada has been calculating and publishing the Low Income Cut-Offs, or LICOs. The LICOs have served to identify families and individuals with relatively low incomes, that is, those who are most likely to be facing financial hardships.

The LICO definition of a low-income family is quite simple to describe, although the underlying calculations are very complex. The LICOs are set at the income levels where the proportion of income spent on food, clothing and shelter is 20% higher than the average family. Data relating incomes to expenditures are calculated using the Family Expenditure Survey (FAMEX), which in recent times has been conducted every four years. The periodic recalculation of the LICOs that follows the completion of each FAMEX survey has provided Statistics Canada with the opportunity to review the methodology underpinning its low-income lines.

In 1988, when the 1986 FAMEX results became available, and the time came to review the LICOs again, the Agency conducted a much more thorough review than usual. A background document, entitled *Statistics Canada's Low Income Cut-Offs: methodological concerns and possibilities* was circulated, and responses were actively encouraged from interested parties. Consultations were also held with selected user groups, the Advisory committee on social conditions, and the National statistics council.

This cautious approach to redefining a low-income line is entirely in keeping with statistical tradition, since (as noted) there is no objective, scientific basis for determining a "poverty line." Nevertheless, Statistics Canada and its user community recognize that having one main low-income concept is necessary to avoid possible confusion when debating the issue. However, there is no consensus about what this concept should be: equally popular are the existing LICOs (or some variation thereof) and a new concept – called the Low-Income Measure, or LIM – based on median family income.

As the background paper documented, no single measure is superior to the others in meeting all criteria. Nevertheless, the proposed LIM has a few features to recommend it. Low income is defined as 50% of adjusted median family income every year ("adjusted" for number of adults and children in a family). It is simple to apply, easy to understand, explicitly states its underlying assumptions and can be updated every year. But several unresolved issues exist, for example, if the measure should be adjusted for size of area of residence as well as family size (as the LICOs are now).

Given that the review process did not produce agreement about the future of the low-income measure, two decisions were made. The first was that the LICOs, as presently constituted and based on the 1986 FAMEX, will be used as Statistics Canada's main low-income measure for the time being. The second decision was that over the next few years, the user community will be consulted again about the LIM alternative. If there is general satisfaction with the concept, the current LICOs may be replaced with the "one-half adjusted median income" LIM.

In future, we will keep you informed about such discussions and decisions in the **What's new?** department. The main purpose of **What's new?** is to present the major findings of specially commissioned surveys, analytical studies and other reports, or developments in statistical programs such as the LICO program; its second aim is to briefly inform readers about special, non-routine surveys currently being conducted. Regular readers may recognize **What's new?** as the old **Sources** department. Neither the content nor the purpose of the original information digest has changed, but the new name reflects the leaner "news bulletin" character of the department. Scan through the Highlights section for a list of the topics that may be of particular interest to you.

Ian Macredie
Editor-in-Chief



P.S. An **Index of Perspectives** articles appears in this issue offering a cross-referenced listing of all articles published since our debut in Summer 1989.

Highlights

Here are some key findings from the articles in this issue of Perspectives on labour and income.

Women and RRSPs

■ Between 1979 and 1989, women aged 18 to 70 increased their Registered Retirement Savings Plan (RRSP) participation rates from 6% to 19%, and their total contributions jumped from \$700 million to \$4.5 billion.

■ In 1979, just over a quarter of all RRSP participants were women. By 1989, women represented a full 41% of all RRSP participants.

■ Women contributed 91% of the \$4.9 billion credited to their RRSPs in 1989; spouses contributed the balance or just under 10% of the total.

■ While 23% of married tax-filing women between the ages of 18 and 70 and with a tax-filing husband, participated in RRSPs, only 19% of unmarried women and just 14% of those married to non-filers contributed.

Unemployment – occupation makes a difference

■ High-skill occupations consistently experience lower unemployment rates, and are least affected by economic downturns.

■ Occupations that traditionally experience high levels of unemployment are attracting fewer workers, while high-skill occupations, that have low unemployment levels, are rapidly expanding.

■ During the recession, the sharpest increases in unemployment occurred in traditional "blue collar" occupations.

■ Even when the economy peaked in 1989, and the national unemployment rate was only 7.5%, certain occupations experienced high unemployment rates (for example fishing, logging and mining at 16.4%).

Lifelong learning: Who goes back to school?

■ Over twice as many adults, aged 30 to 64, enrolled in credit courses in 1990 as in 1980. Three-quarters of these adults took credit courses on a part-time basis in both years.

■ Approximately 64% of all adult students taking credit courses were women. Almost 5% of all women aged 30 to 64 participated in credit courses, compared with only 3% of men this age.

■ While most adults still enrol part-time in social sciences, education and humanities courses, an increasing number of adults took part-time courses in mathematics and health-related studies during the 1980s.

■ One-quarter of male students, and one-half of female students are employed in community service-based industries such as education and health.

■ Persons who are unemployed or not in the labour force almost doubled their participation rate in credit courses during the 1980s. In 1990, close to 5% of these adults participated in credit courses.

Marriage, money and retirement

■ Men aged 55 to 64 with a tax-filing spouse are less likely to take an early retirement than unmarried men or those married to a non-filer.

■ Men aged 55 to 64 who have a tax-filing spouse also have a higher average personal income (\$37,400 in 1988) than men married to a non-filer (\$33,600) or unmarried men (\$24,500).

■ Employment income is more likely to be reported by men aged 55 to 64 with a tax-filing spouse (83%), than by men married to a non-filer (77%) or not married at all (65%).

■ Of the total income of men aged 55 to 64, over two-thirds came from employment in 1988, 16% was generated by other sources such as investments and rental properties and only 14% was derived from various pension plans.

Non-standard work arrangements

■ Part-time work is the most common form of non-standard employment. The General Social Survey (GSS) estimates show that 15% of employed Canadians aged 15 to 64 held part-time jobs in 1989.

■ In 1989, approximately 7% of all employed Canadians had a part-year job. Almost one-third of all part-year workers were under the age of 25.

■ The GSS results reveal that 1 in 20 Canadians had more than one job in 1989. Almost 10% of those employed in other consumer services reported having a second job.

■ A total of 799,000 Canadian employees (8% of all employees), identified themselves as temporary workers in 1989. Canada's rate of temporary employment was higher than France's (5%), but considerably lower than Denmark's (12%).

A note on self-employment

■ While there are still fewer female employers than male, their growth rate was almost four times greater between 1981 and 1990 (84% compared with a growth rate of 22% for male employers).

On non-wage labour income

■ Although wages and salaries stagnated in the 1980s, supplementary labour income increased by over 5% between 1980 and 1988.

■ Employees are contributing a greater share towards their pension benefits. In 1978, employee payments accounted for 30% of combined employer/employee contributions. By 1988, the employees' contribution share had risen to 40%.

■ While only 1% of workers contributed 7% or more of their salaries towards their pension in 1970, by 1988 over 50% did.

■ The proportion of the labour force covered by a private pension plan declined slightly during the 1980s. In 1988, 37% of the labour force was in a private pension plan.

■ Industries with high hourly wages and salaries also tend to have the highest levels of employer-provided benefits. These industries include public administration; transportation, communication and other utilities; health services; education services; and manufacturing.

A note on the Work Sharing Program

■ During the first quarter of 1991, more than 5,300 firms employing over 92,000 persons participated in the Work Sharing Program, and nearly 33,000 layoffs were averted.

What's new?

■ A new report on Canadians approaching retirement age has just been released.

■ Data on RRSP contributors and contributions for small geographic areas are available from the *1989 RRSP report*.

■ *Pension plans in Canada: 1990* examines the 20,000 registered employer pension plans in Canada.

■ The Survey of Employment, Payrolls and Hours (SEPH) now offers users a revised historical data series, and more detailed information in a revised and expanded line of products and services.

■ Statistics on foreign economic conditions are regularly published by the Organisation for Economic Co-operation and Development.

■ Two new studies in Statistics Canada's Research paper series examine industrial efficiency and the performance of high technology firms in Canadian manufacturing.

■ A new survey collects information on workers with non-standard hours – for example, shift work, compressed workweek and flexitime. Another new survey looks at Canadians' experiences of and attitudes towards technological change in the workplace. □

Women and RRSPs

Hubert Frenken

Securing their future or reducing their tax liability? For these or other reasons, Canadian women dramatically increased their Registered Retirement Savings Plan (RRSP) participation and contributions during the 1980s. In addition, an increasing number of women benefited from husbands' contributions to their RRSPs.

Rapid growth

The number of women who have accumulated RRSP savings, and the amount they have saved over the years, cannot be determined from the available data. However, from annual personal income tax information we do know how many women contribute, and how much they deposit in any given year. In 1979, only 484,000, or 6% of all women aged 18 to 70, participated in RRSPs. By 1989, however, 1.7 million, or 19% of all women in this age group, contributed. Similarly, women's annual RRSP deposits increased dramatically, from \$700 million in 1979 to nearly \$4.5 billion in 1989.

In the last decade, the rates of growth in both RRSP participation and amounts contributed were much greater for women than for men. In 1979, only 28% of RRSP

participants were women; by 1989, however, they represented 41% of all contributors. Similarly, in 1979, just 23% of all contributions were made by women, while ten years later their share had climbed to 33%.¹

Additional contributions by husbands

Some women were beneficiaries of spousal contributions. Of the 4.1 million taxfilers claiming RRSP contributions for tax-deferral purposes on their tax returns in 1989, 140,000 deposited \$472 million into their spouses' RRSPs. Virtually all of this amount (98%) was contributed by husbands into accounts registered to their wives. However, of the \$4.9 billion credited to women's RRSP accounts in 1989, women contributed 91% themselves, while the balance came from husbands in the form of spousal contributions. Obviously then, the bulk of women's RRSP savings has come from personal rather than spousal contributions, although the latter have been growing rapidly.

Reasons for growth

Why have RRSPs become such an important savings vehicle for Canadian women in recent years? Part of the answer can be traced to the increased participation of women in the paid labour force. The percentage of the female population aged 25 to 54 participating in the labour force increased from 60% in 1979 to 75% in 1989.

Hubert Frenken is with the Labour and Household Surveys Analysis Division. He can be reached at (613) 951-7569.

About the data sources

Data for total RRSP contributors and contributions from 1985 to 1989, and for spousal contributors and contributions from 1987 to 1989, were extracted from the annual T1 family file produced by the Small Area and Administrative Data Division of Statistics Canada. Data prior to these years came from the Revenue Canada taxation statistics sample file.

The T1 family file is an expansion of the 100% personal tax file and imputes records for the non-tax-filing public, particularly spouses and children. Marital status is generated from information reported by taxfilers in the identification section of the T1 tax returns, in concert with what can be deduced from other information on the returns. For purposes of this study, only couples who are legally married are included in the married group. This is because Revenue Canada does not permit spousal contributions to an RRSP registered to a common-law partner, except for certain roll-overs available at death, or termination of the conjugal relationship (lump sum or periodic payments resulting from a registered pension, retirement savings or profit

sharing plan). The unmarried includes persons in common-law relationships, as well as those who are separated, divorced, widowed or never married. The number of husband-wife compositions on the 1988 file, when measured against intercensal estimates, was found to be quite accurate (98% of the estimated number of all legally married husband/wife families in Canada).

The T1 family file provides data on all RRSP contributions, including roll-over amounts (income from eligible sources transferred to RRSPs, and exceeding the standard annual maximum amount). These roll-over amounts were, to some extent, excluded from RRSP contributions on the Revenue Canada taxation statistics sample file as early as 1976. However, it is only in recent years that the deleted amounts have become large (in excess of \$2.2 billion since 1987). The T1 family file is therefore a more comprehensive source of data on RRSP deposits, especially for recent years.

For further information on the T1 family file, contact the Small Area and Administrative Data Division of Statistics Canada at (613) 951-9720.

With more earning power women were better able to save for retirement, and take advantage of the tax-deferral benefits provided by RRSPs.²

Profile of contributors

There is evidence that some female taxfilers are more likely to contribute and to make higher average contributions than others. In 1989, 21% of female taxfilers aged 18 to 70 contributed to an RRSP. Understandably, women with higher incomes were more likely to participate than those with low incomes. While more than half of all female taxfilers whose income exceeded \$40,000 contributed to an RRSP, only 5% of those with an income between \$5,000 and \$10,000 did so. Age also played a role in the rate of RRSP participation. At 32%, female taxfilers aged 45 to 59 had the highest participation rate. In fact, nearly one out of every three female RRSP contributors belonged to that age group.³

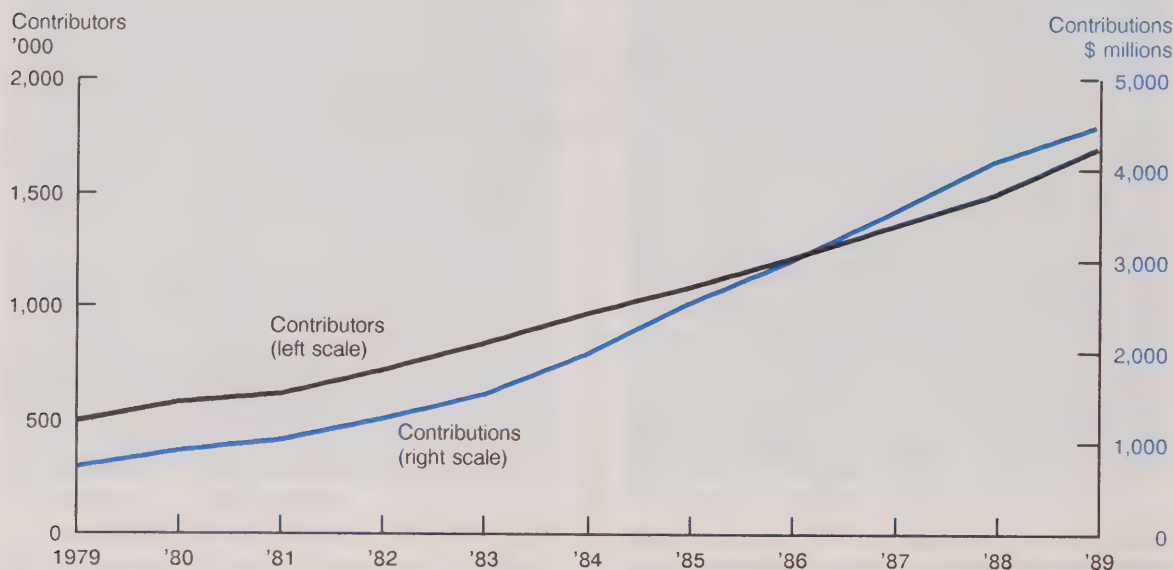
Husband's income makes a difference

Having a husband with an income sufficient to warrant filing a tax return also seems to affect the incidence of RRSP participation among women. In 1989, 23% of married tax-filing women, 18 to 70 years of age, whose husbands also filed a tax return, participated in RRSPs. In contrast, less than 19% of unmarried women and just 14% of women married to a non-taxfiler contributed to an RRSP.

It appears then that the presence in the family of a husband's income increases the likelihood of a woman's RRSP participation. Average personal income was only slightly higher for women with a tax-filing spouse than for those without one; however, the combined husband-wife income of those with tax-filing husbands was over three times greater. It can be assumed, therefore, that higher family income gives women greater financial opportunity to contribute to RRSPs (Table 1).⁴

Female RRSP contributors and contributions

Both RRSP participation and amounts contributed by women increased dramatically during the 1980s.



Sources: Revenue Canada-Taxation and Small Area and Administrative Data Division

Table 1
Female RRSP contributors, with and without a tax-filing husband, 1989

		With a tax-filing husband	Without a tax-filing husband*
Number of contributors	('000)	1,000	686
Contributors as % of taxfilers		23	18
Average personal income	(\$)	17,107	16,337
Average family income**	(\$)	54,558	16,337

Source: Small Area and Administrative Data Division

* Includes married women without a tax-filing spouse, as well as separated, divorced, widowed and never married women.

** Family income is the combined income of husbands and wives (where applicable).

Spousal contributions

Decisions on whether or not to invest in RRSPs and how much to deposit are often made jointly by husbands and wives. Deciding who will claim the contributions might be based on which partner will receive the greatest tax advantage. In the case of spousal contributions, the person with the higher income (most frequently the husband) may make the contributions and claim the tax-assistance, while the retirement savings benefits are credited to the one with the lower income (usually the wife).

It appears that in recent years a growing number of husbands have elected to make such spousal contributions. Particularly large increases, both in amounts contributed and in the number of contributors, took place in 1989. That year, the amount deposited in spousal RRSPs grew 44%, while total RRSP contributions increased only 4%. To a large extent, this

growth can be attributed to a 1989 change in the Income Tax Act that provided new opportunities for spousal deposits unheard of previously. For the first time that year, husbands with pension income were able to transfer up to \$6,000 of pension benefits to their wives' RRSPs. Therefore, those that benefited most from this change in legislation were older women (see *Changing legislation*).

Only 12% of women who accumulated RRSP savings in 1989 received all or part of their deposits from their husbands. But again, the impact of the husbands' income can be seen in the average amounts credited to women benefiting from spousal contributions versus those not benefiting. Average contributions by women without spousal contributions amounted to \$2,500 that year, while spousal deposits registered to wives not contributing themselves averaged \$3,200. Moreover, women benefiting from both personal and spousal contributions had an average of \$6,700 credited to their RRSPs in 1989.

Table 2
Contributors and contributions to
spousal RRSPs, 1987 to 1989

Year	Contributors		Contributions	
	'000	% increase	\$ millions	% increase
1987	86	...	300	...
1988	95	10	328	9
1989	140	47	472	44

Source: Small Area and Administrative Data Division

Into the 1990s

There is every reason to believe that women's RRSP investments will continue to grow well into the 1990s. In fact, the trend may accelerate. If the wage gap between men and women narrows, aided perhaps by employment equity and pay equity legislation, the opportunities and incentives for

Changing legislation

- A change to the Income Tax Act in 1957 permitted Canadians to defer paying taxes on the portion of their income contributed to personal registered savings plans (RRSPs). An annual maximum contribution was specified in the legislation and this level was increased several times in subsequent years.
- Transferring certain income to an individual's own RRSP, above the annual maximum, was permitted in 1966. The amounts eligible for such "roll-overs" were expanded in later years.
- Since 1974, taxfilers have been able to contribute to their spouses' RRSPs and claim these deposits on their own tax returns. Deposits to a spousal RRSP (plus any contributions made to a personal RRSP) were limited by taxfilers' standard annual contribution limits.
- Since 1989, taxfilers have been permitted to roll-over to spousal RRSPs up to \$6,000 annually in periodic payments from pension and deferred profit sharing plans, in addition to the maximum annual contribution amount.
- In 1990, severe limitations were placed on the opportunities to roll-over income from various sources into taxfilers' personal RRSPs. These restrictions were not applied to spousal rollovers.
- In 1991, new comprehensive legislation (Bill C-52) standardized the tax treatment of all private retirement programs, including RRSPs.
- Following the 1994 tax year, the \$6,000 annual spousal roll-over opportunity will be terminated.

women to contribute to RRSPs may increase even more quickly. Furthermore, if women's rate of participation in employer-sponsored pension plans continues to lag behind that of men, they may have greater incentives to contribute to RRSPs.⁵

A number of other factors may play a role in women's RRSP participation rates. In 1991, members of the baby boom generation began breaking into the age group that currently records the highest rates of RRSP participation for women (those aged 45 to 59). Women in this age group often find themselves in a family setting that permits the greatest opportunity for savings. Also,

the recent growth in popularity of group RRSPs should generate increased membership of women, while new legislation (Bill C-52, which came into effect on January 1, 1991) will provide new opportunities for tax-assisted retirement savings never before possible.⁶

While the effects of these developments may take some years to be fully realized, a 1990 change to the Income Tax Act may have an immediate impact on the volume of spousal contributions. That amendment placed severe restrictions on the amounts and types of income that taxfilers could transfer to their own RRSPs (personal roll-overs). It did not affect spousal roll-over possibilities, however, and it is not unrealistic to assume that taxfilers will now increase the amounts they transfer into their spouses' RRSPs. As was shown, spousal contributions increased 44% from 1988 to 1989, the first year taxfilers were permitted to roll-over to spousal RRSPs up to \$6,000 of income from certain sources (in addition to the maximum annual contribution limit).

These transfers will be disallowed after 1994 (see *Changing legislation*).

Conclusion

The entry of women into the Canadian labour market has had a dramatic effect on RRSPs. The rates of growth, both in the number of women who contributed to RRSPs and in the amounts they deposited, have outstripped those of men in the last decade. Although women's RRSP reserves have accumulated mainly through personal contributions, they have also grown through large increases in spousal contributions.

Legislative changes in 1989 and 1991 created new opportunities for both spousal roll-overs and personal contributions, and should have a large impact on women's RRSP accruals in the 1990s. Other developments, such as greater earnings by women, increases in the use of group RRSPs and demographic changes, should also fuel continued growth. □

Notes

¹ For a description of why and how RRSPs were created and for a detailed review of the growth of RRSPs and the factors contributing to this growth, see H. Frenken (Winter 1990).

² Despite the negative impact of the recession of the early 1980s, the average income of families grew 9% in constant dollars from 1979 to 1989, according to the Survey of Consumer Finances – see Statistics Canada (November 1990). Increased female labour force participation was a major contributor to this growth. For information on changes in women's labour force participation rates and their contribution to family income, see A. Rashid (Summer 1991). There is evidence that households with higher income, particularly "discretionary income" not required for spending on "necessities", contribute more to RRSPs than average households. See D.J. Owens (Spring 1991). Finally, for an analysis of changes in income of older women in Canada and the prospects for continued improvements see D. Galarneau (Autumn 1991).

³ There does not appear to be a correlation between age and income. Using 1987 data, it appears that the rate is highest for high-income women (\$60,000 and over) between the ages of 25 and 64 and for those aged 40 to 64 with income between \$30,000 and \$59,999. A more detailed profile of female RRSP contributors by age group and income level, and differences in the patterns of participation for men and women are reviewed in H. Frenken (Winter 1990).

⁴ See the reference in note 2 to the article by D.J. Owens.

⁵ Although the percentage of the female labour force participating in these plans has increased since 1980, in 1990 the rate for women was still only 33% compared with 41% for men. See Statistics Canada (July 1991).

Notes – Concluded

⁶ There is some indication that a growing number of employers are providing group RRSPs to their employees in lieu of pension plans. Under this arrangement, employees can contribute through payroll deductions, employer contributions are possible (although treated by Revenue Canada as salaried

income) and higher investment returns can generally be realized. For further details on group RRSPs, and for an extensive analysis of the prospects for RRSP growth in the 1990s in response to various changes and developments, see H. Frenken (Winter 1990).

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Unemployment – occupation makes a difference

Dave Gower

Unemployment is a major social and economic problem faced by many nations, including Canada. During the 1980s, the number of Canadians available for and seeking work, but unable to find jobs, seldom dropped below one million.

However, the burden of unemployment is not equally shared. For example, unemployment rates are higher for the young than for those aged 25 and over. And certain regions, particularly the Atlantic provinces and the Gulf of St. Lawrence area of Quebec, persistently experience higher than average unemployment.¹

As well, unemployment rates vary widely by occupation. Even with the economy at its cyclical peak in 1989, some occupations had high unemployment rates. In contrast, other occupations maintained low unemployment rates even as the recession deepened in late 1990. This study focuses on the unequal distribution of unemployment among occupations.

Occupation data have been available from the Labour Force Survey (LFS) to the "3-digit" level (about 80 groups) for some time. While such a limited number of classes cannot show the full range of diversity in the economy,² they do show the basic picture of the occupational differences in unemploy-

ment rates. Because many of the 3-digit groups are too small for the LFS to measure accurately, some of them have been clustered together, producing 47 groups in all (see *Appendix*).

Quartiles

One way to show the range of unemployment rates, and to give an idea of the rates encountered by various parts of the occupation spectrum, is to cluster the 47 occupations into quartiles based on their unemployment rates.³

The first quartile contains the quarter of the labour force in the lowest unemployment-rate occupations, while the fourth quartile consists of the occupations with the highest rates. The ranking is based on 1989 annual averages, because that year approximated the economic "peak" of the period of growth following the recession of the early 1980s. Because all comparisons are made using the same ranking, the occupations in the quartiles are always the same and the quartile values can therefore be compared over time.

Not surprisingly, the first quartile contains mostly professional and technical occupations, while the fourth quartile is occupied largely by manual workers. Clerical, sales and various kinds of skilled and semi-skilled manual workers are scattered throughout the two middle quartiles (Table 1).

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Table 1
Annual average unemployment rates, by quartiles of occupations ranked by 1989 rate

	1985	1986	1987	1988	1989	1990
Total	10.5	9.5	8.8	7.8	7.5	8.1
Quartile 1	4.3	4.0	3.8	3.3	3.2	3.4
Farming	--	--	--	--	--	--
Health diagnosing/treating	--	--	--	--	--	--
Nursing	4.0	3.6	3.0	3.0	2.5	2.4
Architecture/engineering	5.1	4.7	3.9	3.1	--	3.4
Mathematics and related	4.3	4.9	3.7	--	--	3.2
Social sciences	3.9	2.7	3.9	3.0	3.1	3.0
Management related	4.8	4.2	4.5	3.8	3.4	3.7
Other medical	4.0	4.1	3.6	3.7	3.5	2.8
Architecture/engineering support	8.8	8.8	5.8	5.2	3.7	5.3
Other sales	4.9	4.4	3.9	4.0	3.7	4.5
Equipment operating	5.5	5.3	6.0	--	--	5.8
Management	4.6	4.5	4.4	3.8	4.0	3.9
Quartile 2	7.7	7.0	6.6	5.8	5.6	6.0
Teaching	4.7	4.5	4.6	3.9	4.0	3.7
Electrical construction	7.9	8.4	7.3	6.4	4.4	6.3
Other fabricating	8.3	7.5	7.1	5.1	4.8	5.7
Natural sciences	6.1	7.3	7.2	7.1	--	6.1
Air/rail/water transportation	8.1	9.3	8.6	6.7	5.6	6.5
Office machine operating	8.1	7.1	6.5	6.2	6.3	7.6
Protective service	8.6	7.8	8.4	6.2	6.4	6.4
Bookkeeping	9.0	7.6	7.0	6.8	6.5	6.6
Electrical fabricating	7.6	7.3	6.1	5.9	6.5	7.8
Stenography/typing	8.2	7.2	6.7	6.3	6.6	6.4
Quartile 3	9.9	9.2	8.2	7.5	7.2	8.1
Commodity sales	8.6	8.1	7.4	7.0	6.6	7.0
Metal fabricating	8.3	9.2	8.3	6.2	6.9	1.3
Filing/mailling/reception	8.9	7.7	7.5	7.9	7.0	8.5
Social work	10.2	10.5	8.7	8.2	7.1	6.5
Arts and writing	10.0	9.0	6.4	8.2	7.1	6.8
Machining	11.3	10.5	9.9	7.5	7.2	10.4
Printing	10.9	8.5	7.4	5.7	7.3	8.3
Other clerical	9.0	9.8	8.3	7.0	7.3	7.4
Other processing	10.9	10.0	8.1	7.0	7.4	9.1
Personal service	10.6	10.3	9.8	8.7	7.7	8.3
Wood product fabricating	14.5	10.5	9.3	9.8	7.9	11.4
Material recording	10.3	8.5	8.2	7.9	7.9	8.0
Bus/truck/taxi driving	11.3	10.7	8.9	8.3	8.1	8.5
Quartile 4*	19.2	17.4	16.5	14.4	14.0	15.1
Mechanics	13.2	11.0	11.5	9.4	8.7	11.8
Textile fabricating	14.5	11.3	11.7	10.2	8.7	14.5
Accommodation	10.4	9.5	8.6	7.7	9.3	7.8
Food preparation	15.2	13.4	13.1	10.9	11.0	11.0
Material handling	15.2	13.7	13.1	11.2	11.2	13.6
Other service	14.6	13.9	12.9	11.4	11.3	11.3
Sports/recreation	14.7	13.4	13.0	11.3	11.7	12.1
Food processing	15.0	13.9	13.2	10.7	12.1	12.6
Other construction	21.6	18.8	15.8	13.9	13.8	16.8
Excavating/grading/paving	18.1	17.4	16.7	15.2	14.9	16.4
Farm labouring	17.2	16.5	16.0	16.0	15.7	14.0
Other primary	21.2	20.2	19.5	17.3	16.4	17.8

Source: Labour Force Survey

* Includes people with no occupation because they have not had a job in the past five years.

The picture at the end of the decade

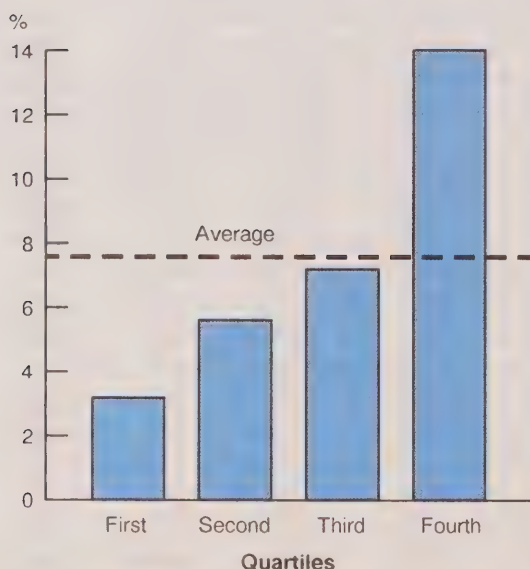
Unemployment is unevenly spread among the quartiles. In 1989, first quartile occupations had an average unemployment rate of only 3.2%, much less than half the national average. Even the third quartile rate of 7.2% was just under the national average. Only the fourth quartile, averaging 14.0%, had rates well above the national. In other words, the distribution of unemployment is highly skewed.

While unemployment rates in particular occupations changed over the 1985 to 1990 period, the relative ranking showed remarkably little variation.⁴

The degree of inequality in the distribution of unemployment in 1989 is clearly illustrated: the quarter of the labour

Unemployment rates by occupation quartiles, 1989

Even in 1989, some occupations had significantly high unemployment rates.



Source: Labour Force Survey

force with the worst unemployment situation (quartile 4) had nearly one-half the national unemployment (465,000 out of 1.02 million). At the other extreme, the best-off quarter (quartile 1) had about one-tenth of total unemployment (107,000).

Some unemployment results from routine turnover in the labour market, rather than a shortage of jobs. As unemployment approaches this minimum level, the economy is considered by many observers to be approaching full employment. Any unemployment remaining is frequently referred to as "frictional unemployment".

In 1989, the annual average unemployment rate for first quartile occupations was 3.2% (in the third quarter of that year it dropped to 2.9%). Such a low rate is likely to be close to the frictional minimum. Yet even while this was happening, unemployment rates for the worst-off quarter of the labour force remained around 14%.

This illustrates the difficulty that Canada had in getting unemployment below one million in the 1980s. As this number (representing an unemployment rate of about 7.5%) was approached, the labour market for particular types of workers started to become tight. Indeed, by the late 1980s, "help-wanted" window signs were becoming common in some locations.

More seasonality in high-unemployment occupations

Fourth quartile occupations have greater seasonal movement than other occupations. Conversely, first quartile occupations have relatively little.

During a normal year, unemployment rates can be expected to drop between winter and summer. The difference between the highest and lowest quarterly unemployment rates, divided by the annual average unemployment rate, produces a measure of seasonal variation. Averaged over the six years 1985-1990, the values for the four quartiles were: 0.15, 0.21, 0.21, and 0.33.

Not only did fourth quartile occupations suffer the highest annual average unemployment rates, they also bore a disproportionate share of seasonal unemployment.

Low unemployment occupations expanded more quickly

Between 1985 and 1988, unemployment declined in all quartiles (Table 2). However, the detailed picture is a little more complex.

Employment growth was fastest in the first quartile. For example, between 1987 and 1988, first quartile employment grew at twice the rate of the other quartiles (5.2% versus 2.5% to 2.6%).

If first quartile employment grew so quickly in 1988, why didn't unemployment decline faster in this quartile than in the others? The answer lies in the labour force

figures (the labour force is the sum of the employed and the unemployed). People entered first quartile occupations at a much faster rate than other quartile occupations.

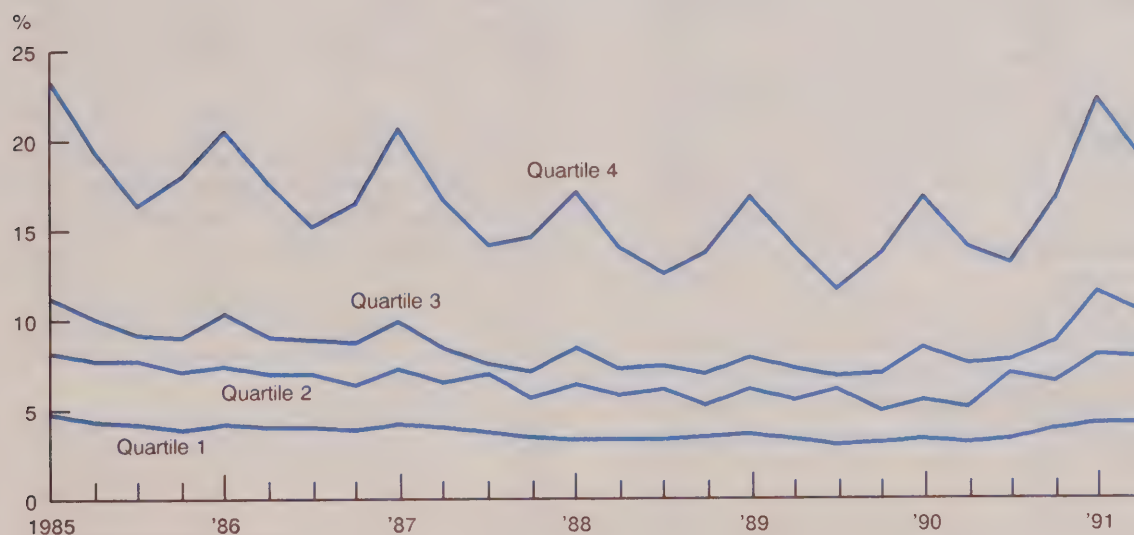
For example, between 1987 and 1988, the first quartile labour force grew 4.7% compared with 0.0% to 1.8% for the other three quartiles. This inflow kept first quartile unemployment rates from going even lower.

This movement reflects the steady upgrading of skills occurring in the Canadian labour market, since first quartile occupations tend to require above-average qualifications.

The growth in first quartile employment paused between 1988 and 1989, before resuming in 1990. This pause may have been a symptom of labour shortages in 1989.

Quarterly unemployment rates by occupation quartiles

Seasonal fluctuations are greater in high-unemployment occupations.



Source: Labour Force Survey

Table 2
Summary of trends in occupational quartiles

	1985	1986	1987	1988	1989	1990
Labour force ('000)	12,532	12,746	13,011	13,275	13,503	13,681
Quartile 1	2,983	3,097	3,212	3,363	3,390	3,536
2	2,738	2,769	2,809	2,855	2,890	2,948
3	3,577	3,651	3,744	3,811	3,906	3,894
4	3,234	3,228	3,246	3,245	3,318	3,303
Employment ('000)	11,221	11,531	11,861	12,245	12,486	12,572
Quartile 1	2,856	2,973	3,090	3,252	3,283	3,417
2	2,528	2,577	2,624	2,689	2,727	2,771
3	3,224	3,314	3,436	3,524	3,623	3,579
4	2,613	2,668	2,710	2,779	2,852	2,804
Unemployment ('000)	1,311	1,215	1,150	1,031	1,018	1,109
Quartile 1	127	124	122	111	107	119
2	210	193	185	166	162	176
3	353	338	308	287	283	315
4	622	561	535	466	465	499
Unemployment rate (%)	10.5	9.5	8.8	7.8	7.5	8.1
Quartile 1	4.3	4.0	3.8	3.3	3.2	3.4
2	7.7	7.0	6.6	5.8	5.6	6.0
3	9.9	9.2	8.2	7.5	7.2	8.1
4	19.2	17.4	16.5	14.4	14.0	15.1
Year-over-year change						
Labour force (%)		1.7	2.1	2.0	1.7	1.3
Quartile 1		3.8	3.7	4.7	0.8	4.3
2		1.2	1.4	1.7	1.2	2.0
3		2.1	2.5	1.8	2.5	-0.3
4		-0.2	0.5	-0.0	2.2	-0.4
Employment (%)		2.8	2.9	3.2	2.0	0.7
Quartile 1		4.1	4.0	5.2	0.9	4.1
2		1.9	1.8	2.5	1.4	1.6
3		2.8	3.7	2.6	2.8	-1.2
4		2.1	1.6	2.5	2.6	-1.7
Unemployment (%)		-7.3	-5.4	-10.4	-1.3	9.0
Quartile 1		-1.9	-2.0	-8.7	-3.8	10.6
2		-8.1	-4.2	-10.1	-2.2	8.5
3		-4.3	-8.7	-6.8	-1.6	11.6
4		-9.8	-4.5	-13.0	-0.1	7.2
Unemployment rate (change in % points)						
Quartile 1		-0.9	-0.7	-1.1	-0.2	0.6
2		-0.2	-0.2	-0.5	-0.2	0.2
3		-0.7	-0.4	-0.8	-0.2	0.4
4		-0.6	-1.0	-0.7	-0.3	0.9
		-1.9	-0.9	-2.1	-0.3	1.1

Source: Labour Force Survey

The impact of the recession – a closer look

The recession did not really begin to affect the Canadian labour market until mid-1990.⁵ For this reason, annual average numbers are not the best indicators of the recession's impact. In order to better measure the effect of the recession on the various occupation groupings, data for the "winter-spring" of 1990-91 (loosely defined as the fourth quarter of 1990 and the first two quarters of 1991) were compared with the same period one year earlier. This year-over-year comparison also helps to remove the impact of seasonal factors.

The occupations with the sharpest increases in unemployment rates came predominately from the third and fourth quartiles. These are "blue-collar" occupations, that is, involving manual work. Some are low-skilled but others, such as electrical construction workers, contain a higher proportion of skilled workers.

The fastest percentage growth in unemployment was in second quartile occupations, at 44% (Table 4). However, the quartile with the next fastest unemployment

growth was the first quartile, at 37%. This was considerably faster than the unemployment rise in the fourth quartile (28%). Does this mean that the recession hit first quartile occupations as hard as higher-unemployment groups?

On closer examination, the answer seems to be "not really." Employment in first quartile occupations rose by a healthy 6% between the two nine-month periods, compared with an employment drop of 1.7% overall and a substantial 6.7% decline among fourth quartile occupations.

Which occupation groups participated in the rise in first quartile employment during the recession? The fastest increases were in the social sciences, mathematics and related, nursing, architecture/engineering, other sales, management, and occupations related to management (such as accountants and auditors).

If employment grew so well in the first quartile, why did unemployment go up? And furthermore, since employment dropped so much in the fourth quartile, why didn't unemployment soar even higher in this quartile as the recession took hold?

Flows of people more than compensated for the different employment trends. The third and fourth quartiles suffered net losses in their labour forces (-1.3% and -1.6%). In contrast, the first quartile continued to attract labour force participants (7%), just as it did between 1985 and 1988.

It is not possible to tell from the available data exactly what underlies these differences. Some people may have switched occupations. However, it seems unlikely that many people who previously worked in fourth quartile jobs could qualify for the skilled occupations in the first quartile. Other sources of new entrants into the first quartile may have been new graduates, immigrants, or women returning to the labour force.

Table 3
Occupational groups with the greatest rise (more than four percentage points) in unemployment rates between the "winter-spring" periods of 1989-90 and 1990-91

Occupation	Quartile	Increase (% points)
Other construction	4	8.3
Wood product fabricating	3	8.1
Textile fabricating	4	7.7
Mechanics	4	6.8
Metal fabricating	3	6.7
Excavating/grading/paving	4	5.7
Electrical construction	2	5.2
Material handling	4	4.7

Source: Labour Force Survey

Table 4
Impact of the recession on occupations

	Nine-month periods		Change between periods	
	10/89 to 6/90	10/90 to 6/91		
	'000		'000	%
Labour force	13,522	13,649	126	0.9
Quartile 1	3,426	3,665	239	7.0
2	2,934	2,922	-13	-0.4
3	3,897	3,848	-49	-1.3
4	3,265	3,214	-51	-1.6
Employment	12,483	12,271	-212	-1.7
Quartile 1	3,318	3,517	199	6.0
2	2,783	2,704	-80	-2.9
3	3,601	3,455	-146	-4.1
4	2,780	2,594	-185	-6.7
Unemployment	1,039	1,378	339	32.6
Quartile 1	108	148	40	37.2
2	151	218	67	44.4
3	296	393	97	32.8
4	485	619	135	27.8
	%	%	change in % points	
Unemployment rate	7.7	10.1		2.4
Quartile 1	3.1	4.0		0.9
2	5.1	7.5		2.3
3	7.6	10.2		2.6
4	14.8	19.3		4.4

Source: Labour Force Survey

Conclusion

Unemployment is far from evenly distributed – it is concentrated among a minority of occupations. Over the few years of available detailed data, these differences persisted as the economic growth of the 1980s came to an end. As well, workers in the highest unemployment rate occupations had the heaviest seasonal unemployment.

By 1989, the peak of the 1980s growth period, unemployment rates for some types of workers had dropped to very low levels, even though one million Canadians remained unemployed.

The recession that began in mid-1990 hit manual (blue-collar) occupations the hardest. Some occupations, particularly ones requiring high levels of education,

continued to experience job growth even after the recession was in full swing. In most other occupations, however, employment dropped.

Flows of people compensated for these employment differences to some degree, so that unemployment increased in the best-off occupations in spite of the employment growth.

Perennially high unemployment rates in certain occupations help to explain why, over the period observed in this report, national unemployment did not drop below one million regardless of the level of general economic prosperity. And, for the individual, one's line of work had a big impact on the chances of being out of a job, particularly during a recession. □

Notes

¹ See D. Gower (Summer 1989).

² Experimentation with special clusterings of more detailed classes (4-digit) has produced unemployment rates which have a moderately greater spread than the 3-digit groupings used in this paper. The overall patterns are similar, however.

³ The procedure used was as follows. First, the 47 occupation groups were ranked from lowest to highest unemployment rate. Then they were split into four groups so as to have one-quarter of the labour force in each quartile. Because the occupation groups have a

finite size, the boundaries of the quartiles do not fall exactly at the one-quarter, one-half and three-quarter points of the labour force distribution. Therefore, the labour force sizes of the quartiles are not exactly equal.

⁴ The Spearman rank correlation coefficient between the 1985 and 1990 annual average unemployment rates for the 47 occupations, for example, was 0.938.

⁵ Although national unemployment did not start to rise until the third quarter, other economic indicators (for example, industrial production) showed signs of weakness some months earlier.

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Appendix

The 47 occupational groupings used in this study are aggregations of three-digit code occupations found in the 1980 Standard Occupational Classification (SOC). The following list shows the three-digit occupations contained in each grouping.

Management: officials and administrators unique to government (SOC 111); other managers and administrators (SOC 113/114)

Management related: occupations related to management and administration (SOC 117)

Natural sciences: occupations in physical sciences (SOC 211); occupations in life sciences (SOC 213)

Architecture/engineering: architects, engineers and community planners (SOC 214/215)

Architecture/engineering support: other occupations in architecture and engineering (SOC 216)

Mathematics and related: occupations in mathematics, statistics, systems analysis and related fields (SOC 218)

Social work: occupations in social work and related fields (SOC 233)

Social sciences: occupations in social sciences (SOC 231); occupations in law and jurisprudence (SOC 234); occupations in library, museum and archival sciences (SOC 235); other occupations in social sciences and related fields (SOC 239); occupations in religion (SOC 251)

Teaching: university teaching and related occupations (SOC 271); elementary and secondary school teaching and related occupations (SOC 273); other teaching and related occupations (SOC 279)

Health diagnosing/treating: health diagnosing and treating occupations (SOC 311)

Nursing: nursing, therapy and related assisting occupations (SOC 313)

Other medical: other occupations in medicine and health (SOC 315/316)

Arts/writing: occupations in fine and commercial art, photography and related fields (SOC 331); occupations in performing and audio-visual arts (SOC 333); occupations in writing (SOC 335)

Sports/recreation: occupations in sports and recreation (SOC 336/337)

Stenography/typing: stenographic and typing occupations (SOC 411)

Bookkeeping: bookkeeping, account-recording and related occupations (SOC 413)

Office machine operating: office machine and electronic data-processing equipment operators (SOC 414)

Material recording: material recording, scheduling and distributing occupations (SOC 415)

Filing/mailling/reception: library, file and correspondence clerks and related occupations (SOC 416); reception, information, mail and message distribution occupations (SOC 417)

Other clerical: other clerical and related occupations (SOC 419)

Commodity sales: sales occupations, commodities (SOC 513/514)

Other sales: sales occupations, services (SOC 517); other sales occupations (SOC 519)

Protective service: protective service occupations (SOC 611)

Food preparation: food and beverage preparation and related service occupations (SOC 612)

Accommodation: occupations in lodging and other accommodation (SOC 613)

Personal service: personal service occupations (SOC 614)

Other service: apparel and furnishings service occupations (SOC 616); other service occupations (SOC 619)

Farming: farmers (SOC 711)

Farm labouring: other farming, horticultural and animal husbandry occupations (SOC 718/719)

Other primary: fishing, trapping and related occupations (SOC 731); forestry and logging occupations (SOC 751); mining and quarrying including oil and gas field occupations (SOC 771)

Food processing: food, beverage and related processing occupations (SOC 821/822)

Appendix – Concluded

Other processing: mineral ore treating occupations (SOC 811); metal processing and related occupations (SOC 813/814); clay, glass and stone processing, forming and related occupations (SOC 815); chemicals, petroleum, rubber, plastic and related materials processing occupations (SOC 816/817); wood processing occupations, except pulp and papermaking (SOC 823); pulp and papermaking and related occupations (SOC 825); textile processing occupations (SOC 826/827); other processing occupations (SOC 829)

Machining: metal machining occupations (SOC 831); metal shaping and forming occupations, except machining (SOC 833); wood machining occupations (SOC 835); clay, glass, stone and related materials machining occupations (SOC 837); other machining and related occupations, not elsewhere classified (n.e.c.) (SOC 839)

Metal fabricating: fabricating and assembling occupations: metal products, n.e.c. (SOC 851/852)

Electrical fabricating: fabricating, assembling, installing and repairing occupations: electrical, electronic and related equipment (SOC 853)

Wood product fabricating: fabricating, assembling and repairing occupations: wood products (SOC 854)

Textile fabricating: fabricating, assembling and repairing occupations: textile, fur and leather products (SOC 855/856)

Other fabricating: fabricating, assembling and repairing occupations: rubber, plastic and related products (SOC 857); other product fabricating, assembling and repairing occupations (SOC 859)

Mechanics: mechanics and repairers, n.e.c. (SOC 858)

Excavating/grading/paving: excavating, grading, paving and related occupations (SOC 871)

Electrical construction: electrical power, lighting and wire communications equipment erecting, installing and repairing occupations (SOC 873)

Other construction: other construction trades occupations (SOC 878/879)

Air/rail/water transportation: air transport operating occupations (SOC 911); railway transport operating occupations (SOC 913); water transport operating occupations (SOC 915); other transport equipment operating occupations (SOC 919)

Bus/truck/taxi driving: motor transport operating occupations (SOC 917)

Material handling: material handling and related occupations, n.e.c. (SOC 931)

Printing: printing and related occupations (SOC 951)

Equipment operating: stationary engine and utilities equipment operating and related occupations (SOC 953); electronic and related communications equipment operating occupations, n.e.c. (SOC 955); other crafts and equipment operating occupations, n.e.c. (SOC 959)

Lifelong learning: Who goes back to school?

Cynthia Hagggar-Guénette

With the declining number of jobs in primary industries, and new technologies in manufacturing and service industries, today's workers need to learn many new skills during their working lives. Indeed, many labour market analysts and educators declare that today's workers face a lifetime of learning.

The concept of lifelong learning was outlined by the Organisation for Economic Co-operation and Development (OECD) in the early 1970s as a strategy for new educational services. These services would provide opportunities for adults to go back to school at any stage of their lives.¹ It was expected that new educational services would help men and women in the labour force keep abreast of technological and labour market changes.

More recently, lifelong learning became a partial explanation for the dramatic increase in part-time university enrolment in the 1970s and 1980s. Competition for high-paying jobs, high unemployment, women's increased presence in the labour force, employers' greater willingness to sponsor workers' education, and the increased supply of part-time courses were all thought to be leading adults back to school.²

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This article examines the labour force characteristics of adults aged 30 to 64 who were taking credit courses in October of 1980 and 1990.³ The Labour Force Survey (LFS), a monthly household survey conducted by Statistics Canada, divides the working-age population into three mutually exclusive groups – the employed, the unemployed, and persons not in the labour force – and collects data on the educational activities of all three groups. October data were selected for this study because that month represents the peak enrolment period.

More adults returning to study each year

One indicator of lifelong learning is the growing number of adults returning to study each year. An estimated 461,000 adults, or 4% of the population aged 30 to 64, returned to take credit courses at the primary, secondary, trade and vocational, college and university levels in October 1990, compared with 227,000 persons this age, or 2% of the adult population in October 1980.⁴ Three-quarters of these adults took credit courses on a part-time basis in both years.

The majority of adult students were between the ages of 30 and 39, although this proportion declined from 70% to 62% over the decade due to marked increases in the number of adult students aged 40 to 49.⁵ More importantly, the rate of participation in credit courses by age showed that a

Table 1
Students aged 30 to 64 by registration and labour force status

	October 1980			October 1990			Change: 1980 to 1990		
	Total	Men	Women	Total	Men	Women	Total	Men	Women
	'000			'000			%		
All students	227	96	131	461	167	294	103	74	124
Employed	158	80	78	314	123	191	98	54	144
Other*	69	16	53	147	44	103	114	179	95
Part-time students	176	74	102	339	117	221	93	59	117
Employed	144	72	72	276	107	169	92	49	136
Other*	32	--	31	63	10	53	96	--	73
Full-time students	51	22	29	122	49	73	138	125	149
Employed	15	8	7	38	16	22	160	101	226
Other*	37	14	22	84	34	51	130	138	125

Source: Labour Force Survey

* Includes persons who are unemployed or not in the labour force. Of these, the unemployed accounted for 4% of all students in October 1980 and 6% in October 1990.

greater proportion of adults from each age group had been returning to school each year. Although the highest rate of participation was among adults aged 30 to 34 years, adults aged 40 to 49 experienced the largest growth in numbers over the decade.

Women made up the majority of adult students taking credit courses. Their share of the student population climbed from 58%

to 64%, as the number of women taking credit courses rose 124% over the decade, compared with a rise of only 74% for men. In 1990, 5% of all women aged 30 to 64 participated in credit courses, compared with only 3% of men this age. In each age group, more women participated in credit courses than men, although participation rates for both sexes declined with age.

Credit courses

Credit courses are courses or programs of instruction that count towards a certificate, diploma or degree. Today, a broad scope of credit courses leading to high school diplomas, trade and vocational certificates, college diplomas, university undergraduate and graduate degrees, and professional certificates of training are available to adults.

Adults aged 30 to 64 who reported in the monthly Labour Force Survey (LFS) that they were taking a credit course or engaged in research activities that could be counted towards a certificate, diploma or degree make up the adult population studied here. Since the LFS does not ask whether they have had a break in studies, one must assume that most adult students were returning to school after a period of absence.

Adults may be taking a part-time or full-time credit course, in a classroom or by correspondence, from a public or private educational institution such as a high school, trade or vocational school,

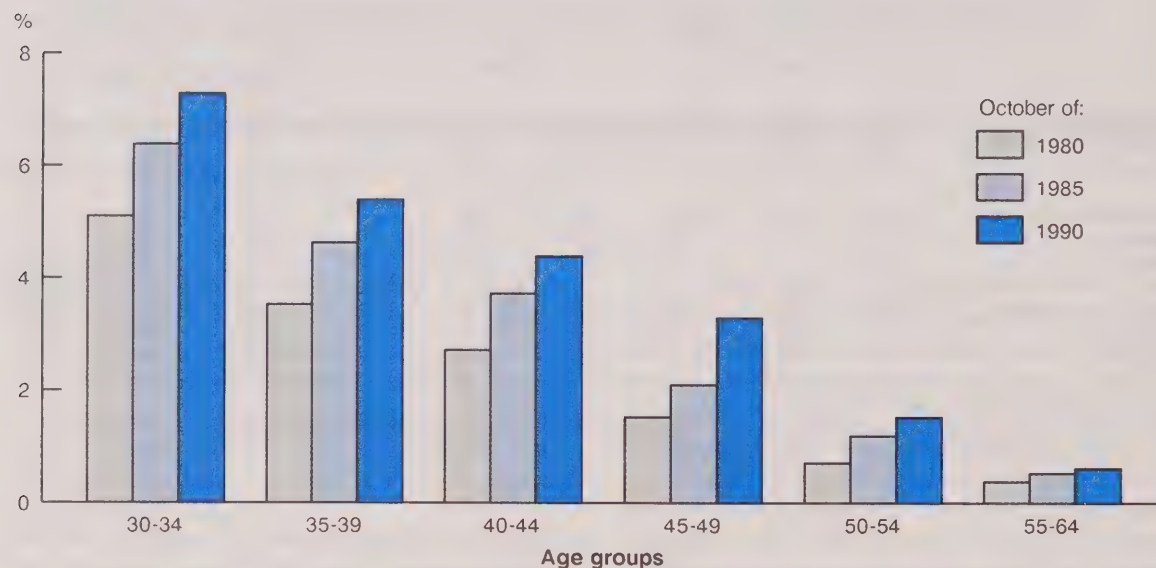
community college, or university. Student nurses and doctors engaged in the practical portion of their training, and other professionals who identify themselves as students are also included.

In addition to public trade school, college and university credit courses, private trade and vocational schools offer credit courses for their own school qualifications. These may be in a variety of subjects such as business, hotel management, computer programming, and word processing. Not all credit courses at trade and vocational schools, colleges and universities are offered on a part-time basis.

Adults taking employer-sponsored credit courses are included if the courses are given in an educational institution, but not if given at the employee's place of work. Persons with a mental or physical disability who are enrolled in special education programs are included. Personal interest courses, such as night courses in pottery or woodworking, are not considered to be credit courses as they do not count towards a certificate, diploma or degree.

Rates of participation in credit courses

Credit courses have become more popular among adults of all ages.



Source: Labour Force Survey

Adult students are already well educated

Adults returning to school have higher-than-average education levels. Throughout the 1980s, the highest rate of participation in credit courses was among adults who had some postsecondary education, followed by those with university degrees. Adults with high school or less had the lowest participation rates in credit courses.

Of course, age and level of education are closely related. Younger adults, who are more likely to be credit course participants, also tend to have a higher education than older adults. As well, the boom in education during the 1980s resulted in three times as many adults with trade and vocational certificates and college diplomas (2.8 million in October 1990 up from 1 million in October 1980), and twice as many adults with university degrees (2 million up from 1 million over the same period).

These changes in the education levels of the adult population had a large impact on their overall rate of participation in credit courses. About one-half of the growth during the 1980s in the adult participation rate was due to the general rise in education of the adult population. In other words, if education levels had remained the same in 1990 as they were in 1980, the overall rate of adult participation in credit courses would have been much lower than the actual 1990 rate.

Most adults returning to school took credit courses at college or university, while a small number took credit courses to obtain primary and secondary school diplomas (18,000 in 1980 and 55,000 in 1990).

Data on field of study by age of student are not available for college students, but such data are available for adult university students.⁶ During the 1980s, the majority of university students

Table 2
Rates of participation in credit courses by sex and selected characteristics

	October 1980			October 1990		
	Total	Men	Women	Total	Men	Women
	%					
All adults	2.4	2.1	2.8	4.0	2.9	5.0
Age						
30-34	5.1	5.0	5.2	7.3	6.1	8.6
35-39	3.5	2.8	4.1	5.4	3.9	6.9
40-44	2.7	1.9	3.4	4.4	3.0	5.8
45-49	1.5	0.9	2.2	3.3	2.0	4.5
50-54	0.7	0.5	0.9	1.6	0.7	2.4
55-64	0.4	0.3	0.5	0.6	0.5	0.7
Education						
High school or less	0.9	0.7	1.2	1.8	1.2	2.4
Some postsecondary	7.6	5.5	10.1	8.6	6.1	11.1
Postsecondary certificate or diploma	5.0	4.3	5.6	5.6	4.2	7.1
University degree	7.2	6.0	9.7	7.0	4.9	9.7
Labour force status						
Employed	2.4	2.0	3.2	3.7	2.6	5.2
Other*	2.4	2.8	2.3	4.6	4.5	4.7

Source: Labour Force Survey

* Includes persons who are unemployed or not in the labour force.

aged 30 to 64 were part-time students in undergraduate programs. Most part-time undergraduate students this age took courses in social sciences, education, and humanities, although the largest increases in enrolment over the decade were in mathematics and the physical sciences, and health-related studies.

On the other hand, full-time university students aged 30 to 64 were equally divided between undergraduate and graduate courses. While most full-time students were concentrated in social sciences, education, humanities, and health-related studies, the greatest increases in enrolment were in mathematics and the physical sciences, agriculture and biological sciences, and engineering. Recent studies of university enrolment have noted increases in the number of older students in full-time studies.⁷

Most adult students are employed

The majority of 30 to 64 years-olds who returned to take credit courses were employed, and most were employed full-time. The number of employed 30 to 64 year-olds who returned to take credit courses climbed from 158,000 in 1980 to 314,000 in 1990. The number of employed women returning to study rose much faster (144%) than the number of employed men (54%). Consequently, the rate of participation for employed men rose only slightly (from 2% to 3%), while the rate for employed women increased two percentage points (from 3% to 5%). Although the reasons for returning to school vary, depending upon each student's personal and family situation, job-related concerns are most often cited by part-time students.⁸

About one-third of adults taking credit courses were not currently employed, that is, they were unemployed or not in the labour force. Their numbers rose faster than those of employed persons, increasing from

69,000 to 147,000 during the 1980s. More than two-thirds were women, and the vast majority were from outside the labour force.

Compared to the striking difference in participation rates of employed men and women, men and women who were not currently employed had similar rates of participation in credit courses. A full 5% of men and women not currently employed participated in credit courses in 1990, up from about 2% in 1980. However, men who were not currently employed increased their participation in credit courses at a much faster rate than women over the decade (an increase of 179% for men compared with 95% for women). As well, almost all of these men took courses full-time, while only one-half of the women did.

Adult students work in white-collar occupations

Since the majority of adult students are employed, where do they work? Are they concentrated in the same industries and occupations as employed adults who are not students?

One-quarter of men students, and one-half of women students were employed in community service-based industries such as education, health and welfare, amusement and recreational industries, and religious organizations. These concentrations were not representative of the distribution of employed men and women throughout all industries. Only 10% of employed men, and 30% of employed women worked in community service-based industries.

Moreover, men and women students were concentrated in just a few occupations. Most women students were employed in managerial and administrative, teaching, medicine, and clerical occupations. Women in teaching occupations made up one-fifth of all employed women students.⁹ Similarly, most men students were employed in managerial and administrative, teaching, and natural science occupations.

It is therefore apparent that most students, both men and women, were employed in white collar occupations. Undoubtedly, the higher education levels of

Table 3
Rates of participation in credit courses of employed adults by selected occupations

	October 1980		October 1990	
	Men	Women	Men	Women
	%			
All occupations*	2.0	3.2	2.6	5.2
Managerial and administrative	3.7	6.2	2.8	6.5
Natural sciences, engineering and mathematics	4.4	--	5.1	7.8
Social sciences	3.6	--	4.8	7.4
Teaching	8.7	12.0	7.5	13.0
Medicine and health	2.9	4.6	6.6	6.5
Artistic, literary, and recreational	--	--	5.6	5.5
Clerical	2.7	3.3	2.2	5.0
Sales	1.8	1.1	2.0	2.6
Service	0.9	0.9	3.3	2.3

Source: Labour Force Survey

* Also includes religion; farming; fishing and trapping; forestry and logging; mining and quarrying; processing; machining; product fabricating, assembling and repairing; construction trades; transport equipment operating; material handling; other crafts and equipment operating.

adult students had an influence on their concentration in white-collar occupations, as these occupations tend to have higher educational prerequisites.

However, more research is required into the effects of education on the occupation and earnings of adult students, the size of firms where adult students work, the importance of continuous upgrading in jobs that adult students perform, and the availability of employer-sponsored education or on-the-job training.

Conclusion

Lifelong learning was a trend of the 1980s as more adults returned to take credit courses, mainly at colleges and universities. The majority of these students were employed and they may have been taking credit courses to advance in their jobs, improve their salaries, upgrade skills and knowledge that technological advancements made obsolete, or meet the educational require-

ments of new jobs. On the other hand, those students who were not currently employed may have taken credit courses to upgrade their abilities before entering or re-entering the labour market.

The trend in lifelong learning was more apparent among women than men. It may be that occupations in which women are concentrated may require more frequent upgrading of skills, or may reward employees for obtaining educational credentials. On the other hand, women may need higher educational credentials to keep or advance in their jobs, improve their salaries, or obtain new positions.

Lifelong learning was also more apparent among younger adults, and adults with higher educations. It seems likely that the trend towards lifelong learning will continue through the 1990s as the younger adult population becomes more highly educated, and as success in the labour market becomes increasingly dependent upon knowledge skills. □

Notes

¹ See Organisation for Economic Co-operation and Development (OECD) (1973).

² See R. Bélanger, D. Lynd, and M. Mouelhi (November 1982) and also R. Bélanger and T. Omiecinski (Summer 1987).

³ LFS data on credit courses represent just one facet of lifelong learning. Other related data sources are the Adult Education and Training Survey, which studies the participation of adults in full-time programs, apprenticeship programs, employer-related courses, and a broad range of short-term and part-time courses. For further information, contact Stephen Arrowsmith, Household Surveys Division, Statistics Canada at (613) 951-0566. From another perspective, The Human Resource Training and Development Survey, studying the prevalence of training programs in private sector businesses, found 2.4 million employees had participated in formal training programs in 1987. See E. Rechnittzer (November 1990). For further related information, see A. Sharpe (Winter 1990).

⁴ LFS figures include adults taking credit courses at primary and secondary schools and trade and vocational schools. They are therefore higher than enrolment figures published by Education, Culture and Tourism Division.

⁵ The aging of the population had little impact on the overall rate of adult participation in credit courses. If the participation rates by age for 1990 were applied to the age distribution of the population in 1980, the overall rate of credit course participation would be only marginally lower than the actual 1990 rate.

⁶ This information is based on special tabulations provided by Education, Culture and Tourism Division.

⁷ See Statistics Canada (February 1991).

⁸ See M. Porter and G. Jasmin (April 1987).

⁹ At the start of the school year in October 1990, 13% of women teachers and 8% of men teachers aged 30 to 64 had returned to study. No doubt this is because primary and secondary school teachers' salaries are directly linked to their level of education.

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Perspectives on Labour and Income

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Marriage, money and retirement

Hubert Frenken

Does high personal or family income encourage early retirement? A number of studies in Canada and the United States have concluded that the major consideration in an early retirement decision is the perceived adequacy of income by the retiree. Other determinants such as health, workplace interaction, family ties and the labour market activity of one's spouse are also mentioned, but given less importance.¹

Evidence presented in this article suggests that having a spouse participating in the labour force may be a more important element than previously thought. In fact, it may be more critical to a retirement decision than income level. The analysis, which uses 1988 aggregated tax data, is limited to men aged 55 to 64 and focuses on the impact that marriage and spousal income have on the incidence of early retirement.² Of the one million men in this age group who filed tax returns for 1988, 56% were married and had a tax-filing spouse, 27% were married to non-filers and 17% were unmarried (widowed, separated, divorced or never married).³

Observations

It seems reasonable to assume that, on average, men who have a spouse with

significant income will be in a better financial position to retire before age 65 than men without such a spouse. The contribution made by their wives to family income, and possible family savings, might allow these men to retire and apply for pension benefits sooner than other men this age.⁴

However, the results of the analysis show that, for men aged 55 to 64, having a spouse with income sufficient to warrant the filing of a tax return for 1988 did not increase their likelihood of receiving pension income.⁵ In fact, the opposite was the case. Only 34% of men aged 55 to 64 with a tax-filing spouse reported income from pension plans (both public and private), while 40% of men whose wives did not file a return, and 37% of the unmarried men reported pension income. On the other hand, 83% of men in this age group who were married to a tax-filing spouse reported income from employment (either paid work or self-employment), while 77% of those married to a non-filer and 65% of the unmarried men did so.⁶ It appears, then, that 55 to 64 year-old men who have a wife with sufficient income to require the filing of a tax return are more likely to be employed, and less likely to receive pension benefits than men who do not have such a spouse. In other words, men with tax-filing spouses seem more apt to delay retirement than other men.

Can this situation be attributed to lower income levels? Do married men whose wives file tax returns have lower income on

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Table 1

Male taxfilers aged 55 to 64 by marital status and income, 1988

	All men	Married with tax-filing spouse	Married without tax-filing spouse	Unmarried
Number of filers ('000)	1,062	594	287	182
% of filers with pension income	36	34	40	37
% of filers with employment income	78	83	77	65
Average personal income (\$)	34,200	37,400	33,600	24,500
Average family income* (\$)	43,400	53,900	33,600	24,500

Source: Small Area and Administrative Data Division

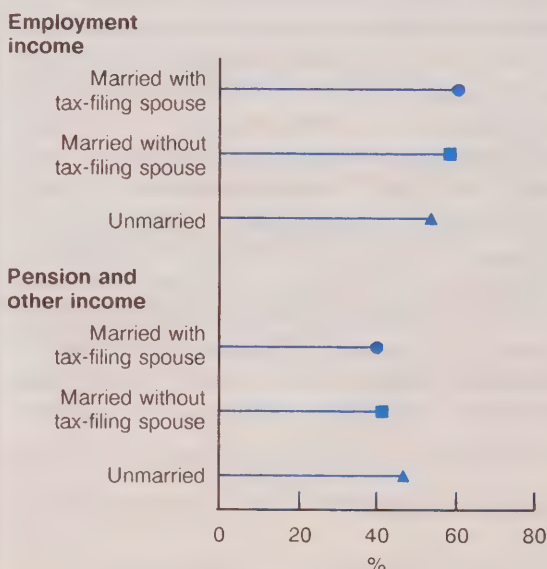
* Family income is the combined income of husbands and wives (where applicable).

average than the other two groups of men? No, just the opposite. Men aged 55 to 64, who were married to tax-filing spouses, not only benefited from the earnings contributed to family income by their wives, but also on average had personal incomes higher than those of men married to non-filers or not married at all. The incomes of the latter two groups averaged \$33,600 and \$24,500 respectively. In comparison, the personal incomes of 55 to 64 year-old men with tax-filing spouses averaged \$37,400 and their family incomes averaged \$53,900 (Table 1).

Men with tax-filing spouses not only have higher than average incomes, their pension benefits feature less prominently in their total income. The combined income of the one million Canadian men aged 55 to 64 who filed a tax return for 1988 was about \$36 billion that year. The largest share of that total (70%) came from employment, while 14% came from various pension programs and the remainder (16%) from other sources, such as investments and rental property. However, pension benefits accounted for just 12% of the income of married men whose wives filed tax returns, compared with 17% for married men whose wives did not file a return and 15% for unmarried men.

Sources of income of male taxfilers aged 60 to 64, 1988

The proportion of income derived from employment was highest among men with tax-filing wives.



Source: Small Area and Administrative Data Division

Note: "Other income" includes unemployment insurance benefits, investment and rental income and other miscellaneous income, but excludes capital gains.

Conversely, the percentage of income derived from employment was higher for those who had a tax-filing spouse (71%) than for the other two groups (69% and 65% respectively).

Conclusion

It appears that men who have spouses with an income high enough to warrant the filing of a tax return are less likely to opt for early retirement than other men. This is the case despite the fact that these men tend to have higher personal as well as family incomes than married men whose wives do not file tax returns, or men who are not married at all.

This observation may indicate that income does not play as prominent a role in retirement decision-making as previously thought. Family considerations, especially the retirement intentions of one's spouse, may be the critical element. There is ample evidence that women's savings for retirement lag behind those of men, and

many wives do not have the same freedom to retire early with pensions as generous as those of their husbands. Also, on average, wives are younger than their husbands and may have to wait longer than their husbands for pension eligibility. Thus many men, whose wives are working, may be reluctant to terminate employment, only to find themselves at home alone. In such cases, couples may decide to retire jointly, at a date later than initially planned by the husband.⁷

This limited study suggests that the tax data used here could be subjected to much more detailed investigation. Multivariate analysis might provide answers to a number of questions raised by the observations noted in this article. For example, is there an income threshold at which spousal earnings become a determining factor in the decision to retire? Do retired 55 to 64 year-old men exhibit personal characteristics that are significantly different from those of other men this age? Are these characteristics different from those of 55 to 64 year-old retired women? □

Notes

¹ Having adequate and accessible income is cited as the dominant factor in the retirement decision, although it is certainly not the only one. It must be remembered that what may seem adequate to one person may not necessarily be so to another. Also, the level of pre-retirement income may play an important role in the individual's perception of what constitutes adequate pension benefits. See B.D. McPherson (1983); M.D. Packard and V.P. Reno (1989) and also A.L. Gustman and O.S. Mitchell (1990).

² Early retirement is generally defined as retirement before age 65. The criteria used in this article to identify people that are retired are based on the sources of income of the individuals examined. It is assumed that the likelihood of being retired rises as the share of total income obtained from pensions increases (coupled with a correspondingly declining share obtained from employment). For a description of both the validity and limitations of this method, and for a detailed review of the trend to early retirement in the last twenty years, see H. Frenken (Autumn 1991).

³ The aggregated tax data used in this study are derived from Statistics Canada's T1 family file. The T1 family file, an expansion of the personal income tax file, imputes records for part of the non-filing public, particularly spouses and children. It also permits the calculation of family income by combining incomes reported on tax returns filed by husbands, wives and children living at home. Information on the T1 family file can be obtained from the Small Area and Administrative Data Division of Statistics Canada by calling (613) 951-9720.

In this study, only spousal income was considered in determining "family" income, and total income consists of the taxfilers' assessed income less capital gains, plus child and sales tax credits. The analysis was restricted to men aged 55 to 64, since they continue to have larger pension accruals than women and since a significant percentage of women in this age group do not file tax returns. See D. Galarneau (Autumn 1991).

Notes – Concluded

⁴ There is a wide range of opportunities to save for retirement, many with tax assistance. See H. Frenken (Autumn 1991) for a detailed analysis on how participation and savings in tax-assisted pension programs have grown in the last three decades and how benefit and early retirement conditions have improved.

⁵ Some spouses file tax returns even though they have little or no income. They may file to receive certain grants and allowances, such as federal child and sales tax credits and provincial tax credits. Child tax credits must be claimed by the parent to whom family allowance benefits are paid (usually the mother), while the other credits can be claimed by either spouse (not both). However, few wives of 55 to 64 year-old men would be entitled to child tax credits and generally spouses with the highest incomes (usually the husbands)

claim the other credits. Therefore, it is safe to assume that, with few exceptions, spouses of 55 to 64 year-old men who file tax returns have taxable income or, at least, income from which tax was deducted at source.

⁶ The sum of the percentage of men receiving pension income combined with the percentage earning employment income may exceed 100%, since many taxfilers receive income from both pensions and employment (as well as other sources) simultaneously. See H. Frenken (Autumn 1991).

⁷ Some evidence which substantiates this speculation was found by S. LaRock in a study on retirement patterns in the United States. The results were published in an article in *Employee benefit plan review* (1987).

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Non-standard work arrangements

Harvey Krahn

Most employed Canadians have a full-time, year-round, permanent, paid job. But as in other industrial market economies, alternatives to this standard type of employment appear to be slowly increasing. Non-standard work, also described as "atypical work" or "contingent work", takes a variety of forms.¹ Compared to the middle of the century when it was largely non-existent, part-time work has become much more common in Canada, particularly in the last two decades. More recently, short-term employment, temporary-help agency work, and own-account (no paid employees) self-employment have also increased.

While the outline of these trends can be seen, more detailed analysis is needed. Because of limited data and a lack of consensus regarding operational definitions, estimates of the extent and growth of non-standard work in Canada tend to be vague and contradictory. It remains unclear whether non-standard jobs are common in all industrial sectors, largely restricted to service industries, or primarily found in lower-tier service industries (see *Methodology and definitions*). Furthermore, it would be useful to see how age and sex are related to non-standard employment status.

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Some workers obviously choose alternative forms of employment (for example, part-time work) because of personal preferences. But for others, such choices might be a response to a difficult labour market.² In other words, some workers may create their own jobs because none are available, or may choose temporary work only when permanent jobs are scarce. On the supply side of the labour market equation, researchers have debated the extent to which "flexible firms" have emerged in the economic restructuring of the 1980s. Such firms rely heavily on part-time, temporary or sub-contracted workers in order to reduce their costs and their commitment to employees.³

Non-standard jobs typically provide less job security, lower pay, and fewer fringe benefits. To the extent that non-standard employment is replacing full-time, year-round, permanent work, the financial security of some Canadian workers may be decreasing.⁴ Non-standard jobs are concentrated within particular segments of the labour market, and are more likely to be held by specific population sub-groups, so their impact is also unequally distributed.

Self-employment

In 1989, 7% of all employed 15 to 64 year-old Canadians were own-account self-employed, roughly the same number were employers,

and the vast majority (85%) were employees (Table 1). Young workers were least likely to be among the own-account self-employed. The proportion of own-account self-employed increases across age categories, but more so for men. One in ten men aged 45 and older are self-employed (without any employees), compared with 8% of women. However, the proportion of employers increases much more significantly with age among men.

To what extent do different industries provide opportunities for self-employment, or perhaps force people to take up this form of work? Less than 30% of Canadians are employed in the goods-producing industries and a similar proportion of the own-account self-employed are found here. The agricultural industry, where family farms are still quite common, displays a very high level of

own-account self-employment (45%). While not as high as in agriculture, own-account work is also quite common in construction (13%), an industry in which individual entrepreneurs continue to operate. However, own-account self-employment is rare in the manufacturing and natural resource-based industries, where large work organizations are prevalent.

In the service sector, very little own-account self-employment is observed in education, health, and welfare (where most workers are public employees). While only 6% of those working in distributive services are own-account self-employed, a higher-than-average proportion (9%) are found in business services. However, own-account employment is most extensive (11%) in other consumer services. Because of its large size

Methodology and definitions

The fourth General Social Survey (GSS) was developed around the general topic *Work and Education: Toward the Year 2000*. A total of 9,338 individuals, representing the non-institutionalized population (age 15 and older) of the ten provinces, were surveyed in February 1989. The response rate for this telephone survey was 80%.

This article considers only the currently employed (including students holding a job while attending school), as well as a small number who would normally have been working but were temporarily away from their jobs. It is also restricted to those between the ages of 15 and 64, even though a significant number of Canadians 65 and older are still active members of the paid labour force. Because of the size of the GSS sample, estimates for subgroups of the 65 and older population cannot be provided.

Own-account self-employed (with no employees) are distinguished from employers (the self-employed who have others working for them) and employees (paid workers). Only the own-account self-employed are treated as non-standard workers. Temporary workers are those reporting a job with a specific end-date. The analysis of temporary work is restricted to employees (paid workers) since it is more likely that, for this group, temporary work represents employment insecurity (an essential aspect of the definition of non-standard work).

Any individual holding more than one paid job (full-time or part-time) was classified as a multiple jobholder. Following convention, individuals usually working less than 30 hours per week (across all jobs if

holding more than one) were defined as part-time workers. Given the operational definition of part-time work as 75% of a (roughly) 40 hour week, a similar fraction was used to define part-year workers as those typically working nine or fewer months per year in their main job.

A ten-category industrial classification is used. Agriculture is distinguished from other natural resource-based industries (forestry, fishing, mining, petroleum, utilities). These two extractive industry groups, along with the transformative industries (construction and manufacturing) constitute the goods-producing sector. The service sector is subdivided into six categories: distributive services (transportation, communication, wholesale trade); business services (for example, finance, insurance, services to business management); the education, health and welfare sector; public administration; retail trade; and other consumer services (for example, food and beverage, accommodation, recreational and other personal services).

This typology is very similar to the classification system used in the recent Economic Council of Canada discussions of employment in the service economy. The Council distinguished "dynamic services" (distributive and business services) from "traditional services" (retail trade and other consumer services) and "non-market services" (education, health and welfare, and public administration). Here, retail trade and other consumer services are labelled "lower-tier services" because of the evidence of fewer work rewards and lower skill requirements in these industries. The other four service industries are grouped into an "upper-tier" category.

Table 1
Non-standard employment, 1989

	Total employ- ment	Own- account	Part-time employ- ment	Multiple jobholders	Part-year employ- ment	Temporary employ- ment*
	'000					
Total	12,468	858	1,905	635	878	799
Men	6,933	531	505	333	510	391
15-24	1,151	57	352	48	164	151
25-34	2,057	126	72	104	113	112
35-44	1,805	154	--	86	95	52
45-54	1,183	117	--	73	72	27
55-64	736	77	36	--	67	48
Women	5,535	327	1,400	302	368	408
15-24	1,091	31	437	66	103	136
25-34	1,654	84	332	98	95	110
35-44	1,427	108	327	89	90	98
45-54	906	69	193	26	63	45
55-64	457	35	111	--	--	--
Industry						
Agriculture	278	124	--	--	34	--
Natural resource based	818	--	--	--	97	28
Manufacturing	1,779	39	71	88	103	73
Construction	626	81	35	--	107	69
Distributive services	1,326	86	89	54	88	50
Business services	1,337	123	135	78	48	52
Education/health/welfare	2,050	77	484	143	127	184
Public administration	1,124	--	74	41	66	90
Retail trade	1,628	117	515	59	68	88
Other consumer services	1,337	152	424	130	122	136
Size of firm						
Less than 20	3,709	--	729	--	--	212
20 to 99	2,223	--	316	--	--	154
100 to 499	1,836	--	202	--	--	137
More than 500	4,536	--	618	--	--	274
Employment status						
Employee	10,647	--	1,671	528	756	--
Own-account	858	--	174	65	86	--
Employer	900	--	41	41	31	--
Full-time/Part-time status						
Full-time	10,525	--	--	514	590	--
Part-time	1,905	--	--	121	284	--

Source: General Social Survey

* Excludes own-account and employers.

(over 1.3 million workers), other consumer services contains more own-account workers than any other sector, including agriculture and business services.

Combining the own-account self-employed and employers, 14% of working Canadians fall into the general self-employed category. This combined figure

matches the Labour Force Survey (LFS) estimate of 14% in both 1987 and 1990. While this total is clearly higher than the 11% observed over a decade earlier (1975), closer examination of the data reveals that the number of employers grew somewhat more quickly than the number of own-account self-employed.⁵ While own-account self-employment should therefore be recognized, it should not be over-emphasized in discussions of a trend towards non-standard employment.

Temporary employment

The analysis of temporary employment is restricted to the 85% of working 15 to 64 year-olds classified as employees. A total of 8% of Canadian employees (799,000) identified themselves as temporary workers (in a job with a specified end-date) in 1989. Studies using a similar definition of temporary employment provide estimates of around 5% in France, about 6% to 7% in Britain, above 8% in West Germany, over 10% in Japan, and in excess of 12% in Denmark.⁶ Thus, Canada does not exhibit an unusually high or low level of temporary work. These foreign studies concur that temporary work has been slowly increasing – the same probably also applies to Canada.

Young workers are considerably more likely to be in temporary jobs, while middle-aged males are least likely to be in temporary jobs.⁷ Workers in construction, where employment contracts are often limited to the completion of a specific project, report the highest level of temporary employment (16%). Thus, as in the case of own-account self-employment, workers in this traditional blue-collar industry face a higher-than-average chance of being in non-standard employment. However, the second highest rate of temporary employment is reported by workers in other consumer services, where 13% have jobs with a specific end date. Since this sector employs many

more people than the construction industry, the absolute number of temporary workers (136,000) is almost twice as high as in construction (69,000).

Construction and other consumer services are industries characterized by relatively small work organizations, which helps explain why the rate of temporary work is highest in small firms. But despite this higher rate, the largest absolute number of temporary workers (274,000) is found in large organizations, where the greatest share of workers are employed.

Many of these large organizations are in education, health, and welfare, where the rate of temporary work (10%) is higher than average. In fact, given its absolute size, this sector has more temporary workers (184,000) than any other. Finally, 8% of Canadians employed in public administration (90,000 in total) reported having temporary jobs.

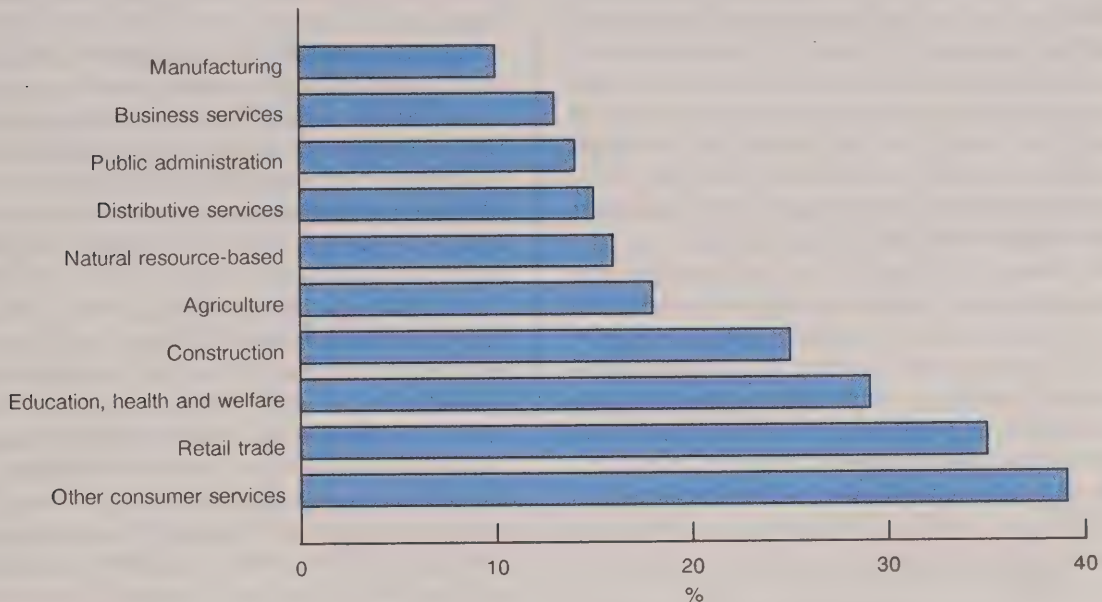
Part-time employment

The increase in part-time jobs with the expansion of the service industries has been well documented. Between 1975 and 1990, full-time employment in Canada increased by 30%, compared with an almost 50% increase for part-time employment.⁸ But this trend to a higher proportion of part-time jobs appeared to slow in the second half of the 1980s. In 1981, prior to the recession, 13.5% of all employed Canadians held part-time jobs. This figure rose to 15.4% by 1983 and shifted only marginally in the following years. In 1989, the increase in the number of part-time jobs was smaller than in any year since the beginning of the decade.⁹

Nevertheless, part-time work clearly remains the most common form of non-standard employment. The GSS estimates show 15% of employed Canadians aged 15 to 64 held part-time jobs in 1989. Women were much more likely to be working part time (25% compared with 7% of men).

Non-standard employment* by industry, 1989

Lower-tier service industries had the highest incidence of non-standard work.



Source: General Social Survey

* Comprises part-time, part-year and temporary work.

The young were most likely to work part time, with more than three-quarters of a million reporting that they worked less than 30 hours per week. The prevalence of part-time employment among young workers reflects the fact that many are also students, for whom a part-time job may be preferable. Among men, part-time work is largely restricted to the young, but a significant minority of employed women of all ages hold part-time positions. While 31% of young men work part time, the proportion of older men in part-time jobs is very low. Among women, a full 40% of the youngest age group held part-time jobs, while between 20% and 24% in each older group reported a part-time job.

About 7 in 10 young part-time workers say they work less than 30 hours per

week because they are attending school. The majority of older female part-time workers say they work part time because they do not want a full-time job, or for family or personal reasons. The few older men in part-time jobs generally report themselves as involuntary part-timers who would work full time if they could find such a job.¹⁰

While part-time work appears to complement the school and family interests of most part-time employees, not all are in these non-standard jobs by choice. However, involuntary part-time employment declined in the second half of the 1980s as the economy recovered. In 1986, the LFS showed an average of 28.4% of part-time workers in this position involuntarily, while the comparable 1989 rate was 22.2%.

Part-time employment is largely a service sector phenomenon, although several of the service industries (distributive and business services, and public administration) reveal rates of part-time work well below average. Part-time work is most common in the two lower-tier service industries (retail trade and other consumer services) where almost one-third of workers are part-time. In these sectors, uneven levels of demand by consumers (for example, entertainment and food services in the evenings; shopping in the afternoons and evenings, and on weekends) provide a strong incentive for using part-time employees.

Education, health, and welfare also relies heavily on part-time workers – both teaching and nursing have high rates of part-time employment. Thus, while part-time work may have first become common in lower-tier service industries, it has also become quite common in upper-tier service industries.

Union members are only half as likely as non-members to be in part-time jobs. To some extent, this may reflect a failure of the labour movement to organize workers in lower-tier service industries – although, given the extent to which these industries rely on student labour, this would clearly be a difficult task.¹¹ However, the very low level of part-time work in the more unionized industries also suggests that some unions may have successfully opposed the introduction of part-time work arrangements.

The different forms of non-standard work overlap significantly. Own-account individuals were somewhat more likely than employees to work part-time. Among employees, 40% of temporary workers were in part-time jobs, compared with only 13% of those in permanent jobs.

Multiple jobholding

During the reference week in early 1989, 1 in 20 Canadian workers reported holding

more than one job, a figure only slightly higher than the 4.5% annual average from the 1988 LFS. No clear relationship linking multiple jobholding with age and sex is evident.

Industry differences (on the basis of main jobs) reflect a pattern similar to that observed for other forms of non-standard work. Perhaps because of the prevalence of part-time and temporary jobs, multiple jobholding is most common in other consumer services (10%) where 130,000 workers reported a second job.

Multiple jobholding could represent a full-time worker "moonlighting" at a second job, or a number of other possibilities. Unfortunately, the GSS cannot tell us exactly why people take a second job. Recent U.S. data reveal that 44% of multiple jobholders have immediate financial reasons (meeting regular household payments or paying off debts), while about 16% are using the second job to save for the future.¹² A similar set of motives would likely be found in Canada.¹³ However, since most dual jobholders are supplementing a first full-time job, and since about one-third of multiple jobholders have a professional or managerial first job, not all multiple jobholders are in precarious financial or employment situations.

Nevertheless, multiple jobholding has been slowly increasing over the past decade. In 1980, 3.1% of all workers held more than one job. By 1988, this had increased to 4.5%. A similar trend has been observed in the United States, where the rate of multiple jobholding increased from 4.9% in 1980 to 6.2% in 1989.

Part-year employment

A year-round job (either part-time or full-time) is the norm against which part-year or seasonal employment is defined as non-standard work. According to the 1989 GSS, 7% of all employed Canadians had part-year

jobs at the time of the survey.¹⁴ Again, young workers are over-represented. Almost one-third of all people typically working nine months or less during the year at their (main) jobs were under the age of 25. Across all age groups, women and men are equally likely to be in a part-year job. Among the young, men are more likely to report part-year work. In the 25 to 54 age category, women report a slightly higher rate of part-year work. The estimates for women aged 55 and older are too low to be reliable, but almost 1 in 10 men in this age group reported a part-year job.

The industrial distribution of seasonal work reflects a pattern more like self-employment than part-time work, temporary work, or multiple jobholding. Part-year work is most common in industries directly affected by seasonal weather conditions: agriculture (12%), natural resource-based industries (12%), and construction (17%). However, the rate of part-year work is also above average in other consumer services (9%), continuing a pattern observed for other non-standard forms of employment. Again, weather could be the ultimate cause, with its effects on accommodation, tourism, and entertainment.

Industry differences can help explain the higher proportion of young workers in part-year jobs. Specifically, many young people are employed in the lower-tier services, and men aged 15 to 24 are also over-represented in the construction industry. Given that young workers are much more likely than older workers to be in part-time jobs, one would also expect to find the higher proportion (15%) of part-time workers in part-year jobs. The own-account self-employed are also more likely to work part-year (10%). The overlapping of different forms of non-standard work is again very apparent.

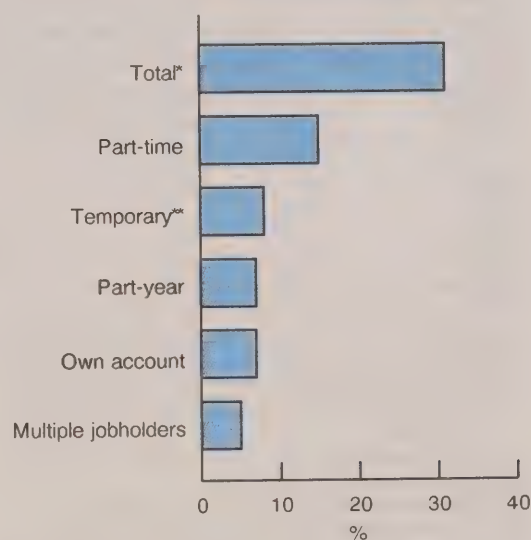
All forms of non-standard work

If the five alternative employment situations were mutually exclusive, about 40% of employed Canadians would be in some form of non-standard work. Even with the overlaps identified above, almost one in three working Canadians have a non-standard job.

It could be argued, however, that multiple jobholding should not be classified as non-standard work. For full-time workers, holding a second part-time or part-year job does not necessarily suggest employment insecurity. For workers holding more than one part-time job, this insecure employment situation would already be registered (as a part-time job) in the operational definition of non-standard work. Going one step further, own-account self-employment might also be

Varieties of non-standard work, 1989

Almost one-third of working Canadians aged 15 to 64 have a non-standard job.



Source: General Social Survey

* Persons in more than one category are counted only once.

** Excludes self-employment.

removed from the definition since it does not necessarily signify employment insecurity. If this restricted definition of non-standard work is used, more than one-fifth of working Canadians report either part-time, part-year or temporary work (Table 2).

Whatever the definition, young workers are over-represented in non-standard work. Within each age category, women are more likely to report some form of non-standard employment. Removing own-account self-employment from the operational definition clarifies the sex difference in the risk of non-standard employment. It also illustrates the extent to which older employed men, compared with those aged 35

to 54, are in non-standard employment relationships, and at risk of becoming marginal labour force participants.¹⁵

Using the broader five-component definition, agriculture heads the list of industries providing non-standard employment. The three-component definition places agriculture back in the "normal" industry category, but other rankings are not disturbed. The two lower-tier service industries, retail trade and other consumer services, exhibit the highest rates of non-standard employment (35% and 39% respectively). One of the upper-tier service sectors (education, health, and welfare) also contains a large proportion of workers in

Table 2
Non-standard employment by age, sex and industry; currently employed, 1989

	Total employment	Definition 1*	Definition 2**
	'000	%	%
Total	12,468	31	22
Men	6,933	25	16
15-24	1,151	45	41
25-34	2,057	21	13
35-44	1,805	19	8
45-54	1,183	22	8
55-64	736	25	16
Women	5,535	37	31
15-24	1,091	51	48
25-34	1,654	31	25
35-44	1,427	37	29
45-54	906	33	26
55-64	457	37	30
Industry			
Agriculture	278	61	18
Natural resource-based	818	18	16
Manufacturing	1,779	16	10
Construction	626	35	25
Distributive services	1,326	23	15
Business services	1,337	24	13
Education/health/welfare	2,050	36	29
Public administration	1,124	18	14
Retail trade	1,628	42	35
Other consumer services	1,337	50	39

Source: General Social Survey

* Comprises any of own-account, temporary work, part-time work, part-year work, or multiple jobholding.

** Comprises any of part-time, part-year, or temporary work.

non-standard jobs (29%), as does construction (25%), a traditional blue-collar, goods-producing industry.

Conclusion

Alternatives to traditional full-year, full-time, permanent paid jobs appear to be increasing in Canada and other industrial market economies. Comparisons with earlier Canadian surveys reveal a slow increase in various forms of non-standard employment. But while the growth and extent of non-standard employment are noteworthy, the trend should not be exaggerated, particularly since the most common form of non-standard employment, part-time work, did not really increase its share of employment in the second half of the 1980s. Nevertheless, in 1989 more than one in five employed working-age Canadians held either a part-time, part-year or temporary job. Women and young workers were most likely to be employed in non-standard jobs.

The growth in non-standard employment is clearly part of the transition to a service-dominated economy. But one must also look beyond the service industries. Some forms of non-standard work (own-account self-employment and part-year jobs) have

long existed in several goods-producing industries (for example, agriculture, natural resource-based industries, and construction). To some extent then, non-standard work also reflects Canada's long-standing reliance on resource-based industries.

However, since service industries account for 70% of all employment, they also contain the majority of non-standard jobs. Non-standard employment is most extensive in the lower-tier service industries (retail trade and other consumer services). But even this is an incomplete picture, since part-time and temporary work have also become more prevalent in the upper-tier services like education, health, and welfare.

What about the quality of non-standard jobs? Do they pay less, offer fewer benefits, provide less job security, or offer fewer career opportunities? Do Canadians employed in full-time, full-year, permanent jobs report a better match between their education and the demands of their jobs? Are non-standard workers less satisfied with their jobs? Are differences in work rewards between standard and non-standard jobs as pronounced in the upper-tier as in the lower-tier service industries? These and other related questions could provide a basis for additional studies.

Notes

¹ See, for example, International Labour Office (1984 and 1985); Economic Council of Canada (1990); F. Piolet (1987) or A.E. Polivka and T. Nardone (1989).

² See Organisation for Economic Co-operation and Development (OECD) (1986); C. Hakim (1988) and A. Dale and C. Bamford (1988).

³ See J. Rubery (1988); A. Pollert (1988); C. Lane (1989); A.E. Polivka, and T. Nardone (1989); M. Maguire (1991) and C. Tilly (1991).

⁴ The effect on the financial security of families is ambiguous. Given the sharp increase in the proportion of multiple-earner families, non-standard employment may be providing jobs for individuals who might not otherwise be in the labour market. As well, non-standard work may be accepted in preference to no work.

⁵ See G.L. Cohen (1989).

⁶ See F. Piolet (1987); A. Dale and C. Bamford (1988); C. Lane (1989). Most of these estimates are from the mid-1980s, but presumably still reflect the current situation.

Notes – Concluded

⁷ Since the 1989 GSS was completed during the winter, student summer employment would not be inflating the estimate of temporary work among youth.

⁸ See H. Pold (Autumn 1990); for U.S. data, see C. Tilly (1991).

⁹ See M. Côté (Spring 1990). However, the 1990 recession led to a further increase in part-time employment in 1990, see P. Cross (Spring 1990).

¹⁰ Given the size of the GSS sample, estimates of involuntary part-time employment by age and sex are based on small sub-samples and, hence, are not very reliable. The estimates reported here are 1989 annual averages from Statistics Canada (1989).

¹¹ Students would not, necessarily, oppose union organizing attempts any more than would other employees. However, to the extent that students view their jobs as temporary, rather than as career beginnings, they would be less motivated to organize

collectively. In addition, staff turnover is high in these industries, making union organizing drives all the more difficult.

¹² See J.F. Stinson Jr. (July 1990).

¹³ See M. Webber (Winter 1989).

¹⁴ For a discussion of year-round employment patterns in 1984 and 1985, see R. Veevers (March 1986). A direct comparison to the 1989 GSS is not possible, since this earlier report does not distinguish between those who "normally" work for less than twelve months and those who moved between employment, unemployment and labour market inactivity for other reasons. However, the Labour Market Activity Survey which has replaced the Annual Work Patterns Survey offers further potential for detailed analysis of annual work patterns.

¹⁵ See J. Parliament (Spring 1987); C. Lindsay (Spring 1987) and G.L. Cohen (Spring 1991).

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A note on self-employment

Henry Pold

The rapid growth in the number of employed women has been well documented – for example, between 1981 and 1990 female employment increased by 27% compared with only 6% for men. Another facet of the labour market that generated considerable interest over the past decade was small business – hailed by many as the engine of growth for employment.

While no long time series on small business is available, the Labour Force Survey (LFS) does provide a good proxy with its estimates of working owners of incorporated and unincorporated businesses. In 1981, the self-employed constituted 12.3% of total employment. By 1990, they made up 13.9% of the total. Over the decade, total employment grew by just over 14%, while self-employment increased more than twice as much (29%).

The influx of women into the entrepreneurial ranks was spectacular. For example, the number of women with incorporated businesses more than doubled between 1981 and 1990, while the number of men increased by little more than one-third. For unincorporated activities, the growth rates were more modest: 51% for women and 12% for men.

In addition to providing jobs for themselves, about 45% of the self-employed were employers with one or more paid employees. From the perspective of job creation, differences between the sexes were also evident: the number of female employers grew by 84% while male employers increased a little more than one-

fifth. (In absolute numbers though, the situation was reversed – an increase of 111,000 men compared with 78,000 women.) The Survey of the Self-employed (November, 1986), an LFS supplement, found that each employer hired an average of 5.5 employees. In addition to themselves then, these new employers may have created slightly more than one million new jobs over the decade. □

Table 1
Employment by class of worker and sex

	1981	1990	Change
	'000		%
Total employment	11,001	12,572	14
Men	6,556	6,948	6
Women	4,445	5,624	27
Working owners	1,353	1,751	29
Men	1,030	1,230	19
Women	323	521	61
Incorporated businesses	412	597	45
Men	353	473	34
Women	59	123	108
Unincorporated businesses	941	1,154	23
Men	677	757	12
Women	264	398	51
With paid employees	607	796	31
Men	515	626	22
Women	92	170	84
With no paid employees	746	955	28
Men	515	604	17
Women	231	351	52

Source: Labour Force Survey

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On non-wage labour income

Norm Leckie and Christina Caron

Labour income consists of both wages and salaries, and non-wage employee benefits. These non-wage benefits are referred to in aggregate as supplementary labour income (see *Definitions and data sources*). The stagnation in real wage and salary growth since 1977 has been well documented.¹ Real hourly wages were 2% lower in 1989 than the peak reached in 1977. By comparison, real hourly supplementary labour income (SLI) was more than 5% higher. This increase in SLI served to mitigate the drop in total labour income that occurred over the period. Indeed, over the 1967 to 1989 period the SLI growth rate consistently outstripped that of wages and salaries, virtually doubling its share of total compensation from about 5% to almost 10%.

Clearly, employee benefits have been an important source of gains in labour compensation during the past two decades. What was the nature of these gains, and how were they distributed across the labour force? This article examines three aspects of SLI: the growth record of its various public and private components; the degree of correspondence between wage and SLI levels by industry; and, changes affecting funding arrangements for the largest SLI component, private pensions.

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Composition of benefits

The relative importance of the five major components of SLI changed between 1967 and 1989 (Table 1). This period can be divided into two distinct sub-periods according to the patterns of growth exhibited by the different SLI components.

From 1967 to 1980, private benefit plans (as represented by employer contributions) accounted for just over two-thirds of the growth of SLI, increasing their share from 61% to 65% of total SLI. Employer contributions to private pension plans constituted the largest component of the growth. At the same time, the Canada and Quebec Pension Plan (C/QPP) component fell from 19% to 12%, causing the overall share of SLI accounted for by public benefit plans to show a corresponding decline. The C/QPP decline reflected the cap on maximum contributory pensionable earnings (to which the contribution rate is applied) that existed until 1976, and the fact that the contribution rate remained constant while the rates for other plans rose. For the other two public components, Workers' Compensation declined slightly, while Unemployment Insurance (UI) jumped from 8% to 12% of SLI, largely as a result of the major expansion of the UI system in the early 1970s.

In contrast to the 1967 to 1980 period, public plan contributions grew more rapidly after 1980. Indeed, public plans accounted

Definitions and data sources

Supplementary labour income (SLI) is neither a true benefit nor a true income in the sense of money directly received by employees. SLI represents the contributions to public and private health and welfare plans made by employers on behalf, and for the future benefit, of their employees. While employer contributions may well be the most practicable measure of these benefits, the use of this indicator of SLI is at times misleading. Changes in employer contributions and in employee benefits do not necessarily move in tandem. For instance, changes in financing arrangements or financial conditions may alter employer premiums without producing a corresponding effect on benefit levels. Indeed, where public benefit plans receive a continuing subsidy out of general taxation revenues, the use of employer premiums alone will chronically underestimate the value of the benefits provided.

The three public SLI components are: the Canada/Quebec Pension Plan, to which employers (and employees) each contributed 2.1% of the employee's annual earnings in 1989 up to an earnings maximum of \$26,900 (with the first \$2,700 exempted); Unemployment Insurance, to which employers contributed 2.73% (and employees 1.95%) of weekly earnings up to an earnings maximum of \$605; and provincially administered Workers' Compensation, to which employers contribute at rates that vary by province, industry and firm size.

Private benefit plans, to which employers (and very often employees) contribute at a specified rate, include employer-sponsored pension plans and plans covering life and dismemberment insurance, disability, extended health care, drug expenses, and dental care. Included with private SLI are employer premiums and payroll taxes to provincial medical and hospital (public) insurance plans, since the data do not permit their separate identification.

Excluded from the analysis are income-in-kind (low-cost housing, food, etc.), and pay for time off (vacation, illness, etc.), which are considered to be part of wages and salaries. Also excluded from the discussion are current fringe benefits partially or wholly paid for by the employer, such as membership fees for professional institutes and parking.

The SLI data in this paper are produced by the Labour Division of Statistics Canada, using administrative and survey data and annual reports.

for almost three-quarters of the growth in SLI, or \$7 billion of the \$9.6 billion change in real SLI, during the 1980s (Table 2).

Although private plans' share of SLI declined in the 1980s, aggregate real contributions to these plans still increased,

Table 1
Distribution of aggregate supplementary labour income*, by component, 1967, 1980 and 1989

	1967	1980	1989
	%		
Private benefit plans	60.8	65.3	54.4
Pensions	37.0	39.7	24.0
Other**	23.8	25.6	30.4
Public benefit plans	39.2	34.7	45.6
Unemployment insurance	8.4	12.1	17.2
Workers' compensation	11.5	10.7	15.5
Canada/Quebec pension plans	19.3	11.9	12.9
Total supplementary labour income (billions of 1989 dollars)	8.7	24.5	34.1

Source: Calculations by Economic Council of Canada, based on unpublished data from Statistics Canada, Labour Division.

* Supplementary labour income comprises payments other than wages and salaries made by employers for the future benefit of their employees.

** Other private benefit plans include life insurance, disability insurance, dental plans, supplementary health insurance, etc. Also included are employer payments of provincial medicare premiums, because the data do not permit their separate identification.

from \$16.0 billion to \$18.6 billion (1989\$), in that period. How much of this growth can be attributed to actual increases in the rate of employer contributions, and how much merely to an expanding labour force? Converting aggregate contributions to a per-hour basis shows that private contributions grew only enough to accommodate a growing workforce: per-hour, constant-dollar employer contributions remained at virtually the same level in 1989 (81 cents) as in 1980 (82 cents).² For public benefit plans, real hourly employer contributions increased from 44 to 68 cents per hour. In fact, all of SLI's increased share of total hourly labour income during the 1980s (from 8.3% to 9.5%) can be attributed to public benefits, since private benefits' share actually fell by two-tenths of a percentage point (Table 2).

Table 2
Real and relative employer contributions to private and public benefit plans, 1980 and 1989

	Total contributions		Hourly contributions*			
			Level		As a share of total labour income	
	1980	1989	1980	1989	1980	1989
	(1989 billion dollars)		(1989 dollars)		%	
Private benefit plans	16.0	18.6	0.82	0.81	5.4	5.2
Public benefit plans	8.5	15.5	0.44	0.68	2.9	4.3
Total supplementary labour income	24.5	34.1	1.26	1.49	8.3	9.5

Sources: *Labour Income Estimates and Labour Force Survey*

* Per actual hour worked.

Given the stagnation in real wages and contributions to private plans, employer contributions to public benefit plans are the only component of labour income that displayed any real growth in the 1980s. On closer inspection, though, some of the apparent increases in public benefits are illusory. Between 1980 and 1988 nearly half of the real growth in public SLI can be attributed to increases in employer UI and C/QPP contribution rates.³ However, neither set of rate increases was associated with any significant improvement in real benefit entitlements. Higher UI premiums were required primarily to offset greater insurance costs imposed by higher unemployment rates and longer spells of joblessness in the 1980s. C/QPP rates were raised because initial contribution rates were too low to fund future pension liabilities.

Industry comparisons

Industries with the highest hourly wages and salaries also tend to have the highest levels of employer-provided benefits.⁴ Hourly benefit levels are greatest in such high-wage

industries as public administration, followed by transportation, communication and other utilities, health and education services, and manufacturing. On the other hand, benefit levels are considerably below average in retail trade, business and personal services, construction, and agriculture, where wage levels are also lower.⁵ The ranking of industries by wages and SLI also essentially describes the standing of the different industries in terms of the importance of private benefits in total labour income.

Private pensions

Within the array of employer-provided benefit plans, pension plans merit particular consideration. With roughly one-half of total employer contributions to private benefit plans and one-quarter of the value of all SLI, pension plans constitute by far the largest single benefits group. As noted, the contribution of private benefit plans to total SLI declined during the 1980s. This was due primarily to a significant reduction in the real value of employer contributions to private pension plans, a phenomenon prevalent in all industries.

Relative earnings and supplementary labour income by industry, 1989

Higher benefits tend to be found in high-wage industries.



Sources: Survey of Employment, Payrolls and Hours, Labour Force Survey, Labour Income Estimates and National Accounts

Declining employer contributions to pension plans over the past decade appear to be the product of at least four factors. First, during the 1960s and most of the 1970s, the proportion of the labour force covered by employer-sponsored pension plans increased steadily from about 29% in 1960 to a peak of about 40% in 1976. After that, however, coverage fell to about 37% in 1988. (See *Pension coverage*.)

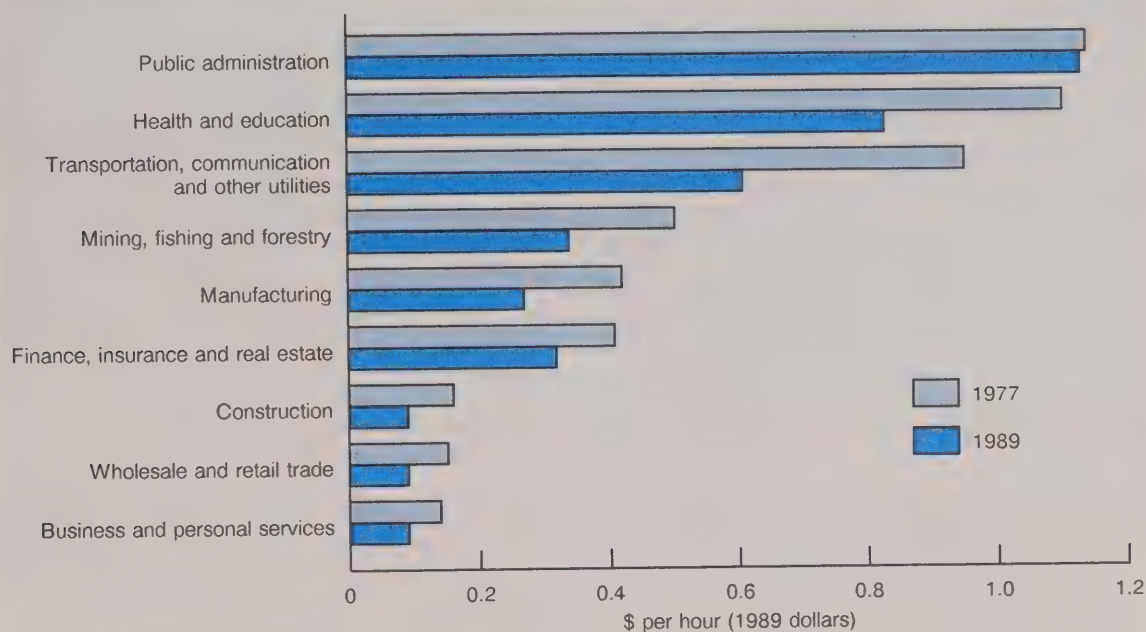
Second, high real interest rates and strong stock market gains improved the overall financial performance of pension funds. This reduced the employer contributions required for defined benefit plans, which account for over 90% of all private pension plan members (Table 3). In these plans, where employees receive a guaranteed pension and employers bear

much of the investment risk, employers need contribute only enough to maintain the actuarial soundness of the fund. Because such plans were doing well, employer contributions declined.⁶

Third, although defined benefit plans remained dominant, defined contribution plans became increasingly important. In contrast to defined benefit plans, employees bear a greater financial risk in defined contribution plans, because benefits are determined by contributions and fund performance. Between 1980 and 1988, defined contribution plans increased their share of members from 5% to 8%, and their share of plans from 42% to 60%.⁷ Thus, even as high interest rates were easing employers' financial burdens in defined benefit plans, a relative shift was occurring towards defined

Employer contributions to private pension plans

Employer contributions declined in all industries, but most significantly in transportation, communication and other utilities.



Sources: Survey of Employment, Payrolls and Hours, Labour Force Survey and Labour Income Estimates

Table 3
Distribution of private pension plans and members, by type of plan, selected years, 1960-1988

	1960	1970	1980	1982	1984	1988
	%					
Plans						
Defined contribution	62.8	54.4	42.3	40.1	51.0	59.8
Defined benefit	35.8	42.8	55.1	57.6	47.3	39.1
Composite and others	1.4	3.1	2.6	2.3	1.7	1.1
Members of plans						
Defined contribution	14.3	5.7	5.2	5.3	5.9	7.6
Defined benefit	84.4	90.1	93.7	93.7	93.0	91.4
Composite and others	1.3	4.3	1.1	1.0	1.2	0.9

Source: Survey of Pension Plans in Canada

contribution plans, where the financial burden on employees is somewhat higher.

Finally, contribution rates of employees in "contributory", or shared-cost,

plans increased during the 1980s as overall employer contributions were falling. This is particularly important because about 70% of pension plan members belong to such plans.

For instance, the proportion of workers contributing 7% or more of their salaries towards their pensions stood at about 1% in 1970, rose to about 40% in 1980, and hit 50% in 1988.⁸ Employee contributions, which in 1978 represented just 30% of combined employer/employee contributions, accounted for 40% of all contributions by 1988.⁹

What was the combined impact of these developments on the funding sources of pension plans? Information to address this question is available only for trusted pension plans, which represent about one-quarter of all plans and two-thirds of all plan members. Employer contributions, which

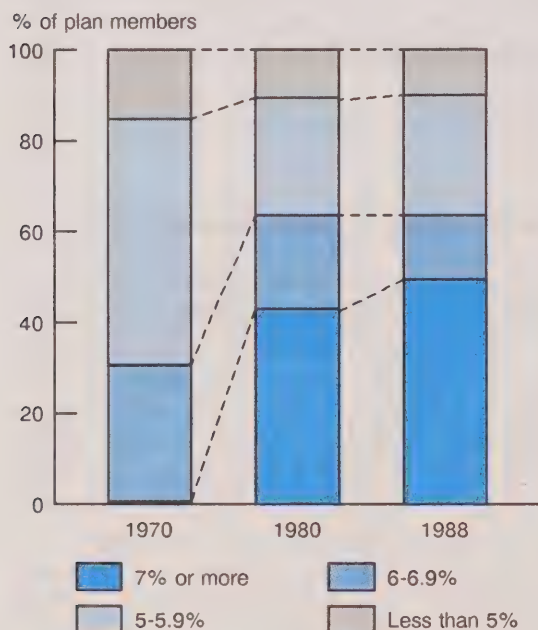
had been the largest single source of income for trusted pension plans during most of the 1970s, were replaced in 1979 by income from investments.

Summary

Since the mid-1960s, SLI, measured by the value of employer contributions to supplementary benefit plans, almost doubled its share of the total compensation package. The growth in real hourly SLI during the 1980s was concentrated in public plans, particularly UI and Workers' Compensation, whereas in the 1970s private benefit plans

Employee pension plan contribution rates*

Since 1970, employee contribution rates have increased considerably.



Source: Pension Plans in Canada data base

* Based only on plans with rates specified as a proportion of earnings.

Sources of income for trusted pension plans

Investment income has become the largest source of income for trusted pension plans.



Source: Survey of Trusted Pension Funds

* Comprises profits on sales of securities, and miscellaneous items.

Pension coverage

The decrease in private pension coverage in the 1980s stems largely from the patterns of job creation during the decade. Growth was concentrated among groups with the lowest rates of pension coverage (Table A).¹⁰ For example, women accounted for over 70% of total employment growth in the 1980s, but their pension coverage was a third less than men's (39% versus 52%). Similarly, non-unionized workers accounted for more than 60% of employment growth from 1981 to 1987, but only 30% of them were covered by private pension plans, versus 78% of unionized workers. Growth was also greatest in traditional service industries, where less than one-fifth of employees were covered by a work-related pension. Most new jobs were created in the private sector, where coverage is far below the public sector. Finally, only 14% of employees in firms employing fewer than 20 persons were covered by a private pension in 1986. Almost three-quarters of employment growth from 1979 to 1987 was concentrated in such firms. (Growth was also strong among the self-employed, who are, by definition, ineligible for membership in employer-sponsored pension plans.)

Have Registered Retirement Savings Plans (RRSPs) led to increased pension coverage? Between 1977 and 1984, the proportion of labour force members with RRSPs nearly doubled (from 12% to 23%).¹¹ However, the majority were already covered by employer-sponsored pension plans, so RRSP holdings raised the proportion of the labour force covered by some kind of private retirement income plan by only 11 percentage points, to 48% (Table B). Moreover, RRSP incidence – like pension coverage – rises with earnings: in 1984 about 55% of those earning more than \$36,000 had an RRSP versus less than 9% of those earning less than \$12,000. Thus, even when RRSP holdings are taken into account, a majority of the labour force – particularly in the lower earnings categories – still have no private pension coverage.

Table B

Incidence of work-related pension plans and RRSP holdings by earnings category among labour force members aged 15 to 64, 1984

Earnings category	Labour force members aged 15 to 64	Proportion with:				
		work-related pension plan only	RRSP and work-related pension plan	all work-related pension plans holders	RRSP only	RRSP and/or work-related pension plan
	'000	%				
All individuals	11,458	24.5	12.6	37.1	10.5	47.8
Less than \$12,000	4,695	7.9	1.1	9.0	7.4	16.4
\$12,000 – \$17,999	1,878	26.9	8.6	35.5	11.5	47.3
\$18,000 – \$26,999	2,373	39.5	17.7	57.2	12.3	69.4
\$27,000 – \$35,999	1,418	44.4	28.1	72.5	11.6	84.1
\$36,000 and over	1,094	34.3	38.1	72.4	16.6	88.9

Source: Assets and Debt Survey, a supplement to the 1984 Survey of Consumer Finances

Table A

Employment growth (1981 to 1989) and work-related pension coverage in 1986

	Employment growth (1981-1989)	Work-related pension coverage (1986)
		%
Total	100.0	46.7
Sex		
Women	71.6	39.4
Men	28.4	52.6
Union membership*		
Unionized	36.3	78.0
Non-unionized	63.7	29.9
Industry group		
Goods		
Primary	-6.3	38.7
Manufacturing	0.1	54.5
Construction	7.6	30.8
Services		
Distributive	7.9	70.1
Traditional	36.6	18.2
Information	23.8	40.5
Non-market	30.2	66.6
Sector		
Private	94.4	43.8
Public	5.6	77.9
Firm size (employment)**		
19 or fewer	73.1	14.1
20 to 99	11.9	35.4
100 to 499	7.5	55.8
500 or more	7.5	70.9

Sources: Labour Force Survey, CALURA, Labour Market Activity Survey, Ontario Ministry of Industry, Trade and Technology

* For the period 1981 to 1987

** For the period 1979 to 1987

had accounted for most of SLI growth. Even here however, the increases were somewhat illusory, as employer contribution rates were raised mainly to maintain the actuarial soundness of the public plans rather than to provide enhanced benefit entitlements to employees.

The absence of real growth in private hourly SLI in the 1980s was due largely to reductions in employer contributions to private (employer-sponsored) pensions. This decline can be partially attributed to falling private pension coverage, reflecting the concentration of employment growth in areas of the economy – small firms, consumer services, part-time jobs, and self-employment – where pension coverage is low. Other factors were the strong financial

health of defined benefit plans, the increasing importance of defined contribution plans, and the rise in employee contribution rates in shared-cost plans.

Paralleling the growing interest in international competitiveness is the need to measure labour costs adequately. One important aspect of labour costs is SLI. Because comprehensive data on SLI employee benefits are lacking in this country, it must be measured by the value of employer contributions to supplementary benefit plans. But this is only a partial measure and more comprehensive information on non-wage cost items is required if we are to accurately measure our labour cost position vis-à-vis our international competitors. □

Notes

¹ See Chapter 8 of Economic Council of Canada (1991); H. Pold and F. Wong (Autumn 1990); P. Smith (Winter 1990) and P.S. Spiro (May 1991).

² Data for the denominator – total weekly actual hours worked multiplied by 52.14 – were obtained from the Labour Force Survey, both in published form (Statistics Canada, *The labour force*, Catalogue 71-001) and unpublished. The actual hours series includes the hours of the self-employed, but there is no SLI information for the self-employed. Since the self-employed do not represent a significant proportion of employment (apart from agriculture and fishing), however, the resultant under-estimation of hourly income is likely small and similar in most industries. (For a more sophisticated technique, see S. David, 1989.)

³ Based on shift-share analysis to isolate the impact of changes in C/QPP and UI employer contribution rates, where 1980 employer contribution rates were applied to 1988 levels of insurable and pensionable earnings. (The latter were estimated by dividing the published employer C/QPP and UI contributory earnings levels by the known respective employer contribution rates.) This yielded hypothetical 1988 employer contributions (based on 1980 employer contribution rates) to which we compared the actual 1988 contributions.

⁴ Public benefits are excluded from the analysis because they do not vary greatly by industry. A basic weakness of the industrial distributions is that the data are collected at the level of the pension plan. So, for

example, all employees under the federal government superannuation plan are coded under public administration, even though many of them actually work in other industries, such as transportation, communication and even manufacturing. The measure of hourly wages used here was calculated by dividing Labour Division's wage and salary income by the Labour Force Survey's (LFS) actual hours series (see note 2 for a discussion of the denominator and the self-employed). Because the self-employed represent a large proportion of agricultural employment, the corresponding wages and salaries were augmented with farm income from National Accounts. Although not the traditional measure of hourly compensation produced by National Accounts (as part of their productivity measurement exercise), the Labour Division/LFS measure was used because it permitted greater industrial detail, consideration of both the business and non-business sectors, and a separate examination of supplementary labour income, which the former does not.

⁵ Wage and benefit levels show a positive correlation with unionization rates by industry. Although not addressed, unionization rates may help to explain the industry variation of SLI.

⁶ In most cases, employers must continue to match (fixed) employee contributions, despite the health of the plan. Outweighing this, however, is the significant incidence of employers taking contribution holidays as a result of over-funding.

Notes – Concluded

⁷ This implies that defined-contribution plans are a small-firm phenomenon, despite the fact that during the 1980s a lot of growth in such plans can be attributed to the partial lifting of restrictions on plans for "significant shareholders." In the United States, where the trend towards defined-contributed pension plans has been even more evident, pensions are viewed as the one area, among all employer health and welfare obligations, with some leeway for labour cost reduction. See Labor Research Association (1990). For a discussion of this issue in other countries, see C. Euzéby (1989).

⁸ These estimates are based only on plans where the contribution rate is specified as a proportion of earnings. Excluded are plans with rates specified as cents per hour or based on age, salary, employee classification or other criteria; in 1970 such plans accounted for 29% (18% variable by sex) of all contributions plans, but by 1988 this proportion had dropped to 7% (none variable by sex). Included in private pensions are plans integrated with the C/QPP, some of which have a two-tier rate structure, with the lower rate applied to earnings below the year's maximum pensionable earnings (YMPE) and a higher rate for earnings above the YMPE. Obviously, this complicates rate comparisons, but see Statistics Canada, *Pension Plans in Canada* (1988), for how this problem was overcome.

⁹ Much of the impetus for the rise in employee contributions came from the public sector to finance benefit improvements such as CPI indexing. In the private sector, contribution rates actually fell, partially to combat the impact of the C/QPP increased contribution schedule. A further reason for the fall in employer contribution rates, was that in the 1970s, many employers were forced to make extensive payments to liquidate unfunded liabilities and actuarial

deficiencies resulting from implementation of the federal/provincial regulatory legislations' funding requirements in the late 1960s. These deficiencies were amortized over a number of years and by the 1980s had been paid off.

¹⁰ The overall rate of pension coverage in Table A, derived from the LMAS, is somewhat higher than that published in *Pension plans in Canada*. But exact correspondence between the two rates would have been unexpected given the significantly different methodologies involved. LMAS data were used in the table because they provide demographic and industrial detail.

¹¹ Based on data from Statistics Canada's Assets and Debt Survey. This is an occasional supplement to the Survey of Consumer Finance, described in G. Oja (1987). The 1977 data were obtained from "Selected tables on coverage under work-related pension plans and registered retirement savings plans, 1977", unpublished mimeo, Statistics Canada, Consumer Income and Expenditure Division (1983). The 1984 data were based on an unpublished Statistics Canada tabulation. The work-related pension information from the 1984 survey excludes those covered only by a pension from their previous job, while that from the 1977 survey includes such persons. This should not greatly affect the results. While more recent data on actual holders of RRSPs and worker-related pension plans are not available, more recent data on contributors to such plans (which would slightly under-estimate the actual number of holders) confirm these findings about the direct relationship between income and pension holdings. (See Statistics Canada, *Pension Plans in Canada*, 1988). Recent changes to retirement savings tax rules, however, will give greater room to contribute to RRSPs.

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A note on the Work Sharing Program

Surendar Singh

The federal "Work Sharing Program", sponsored by Employment and Immigration Canada, is a short-term mechanism designed to avert layoffs in individual firms. During the first quarter of 1991, more than 5,300 firms, employing over 92,000 persons, participated in the program and nearly 33,000 layoffs were averted.

The Work Sharing Program is not unique to Canada. It has been in existence in Western Europe for a number of years. The Canadian program is based on the German model which, since 1927, has made use of unemployment insurance benefits to pay employees on reduced work schedules.

This program is aimed at temporarily alleviating the costs and burdens of unemployment. It benefits workers by keeping them employed, and by providing them with more income than they would have if laid off. It is advantageous to employers because it allows them to keep their trained workers, and thereby saves them the costs of hiring and training new workers when business improves. And finally, it benefits society, because it lowers the economic costs generally associated with layoffs, such as lost wages, a drop in demand for goods and services and the spinoff effects on other industries.

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Background and definitions

Background

The Work Sharing Program originated in 1977 under Section 37 of the Unemployment Insurance Act of 1971. A number of pilot studies were carried out between 1977 and 1979, but the program was suspended until 1982, when it was reactivated in response to the 1981-82 economic recession. Under this program, the available work in a firm is spread among its employees, and everyone works fewer than their normally scheduled hours. Instead of laying off some workers, reduced workhours keep the entire workforce employed – temporarily at least. To compensate for the loss of income associated with working fewer hours, the Unemployment Insurance Commission pays the affected workers 60% of their foregone earnings.

Definitions

The term "work sharing" has often been used interchangeably (and erroneously) with "job-sharing". These two terms look similar but are not identical in meaning.

Work sharing refers to any comprehensive arrangement whereby workers accept reduced hours in order to avert layoffs. This situation occurs generally in economic hard times when a business, for reasons beyond its control, experiences a slackening demand for its goods and services in the short run, but otherwise expects to be viable in the long run.

Job-sharing, on the other hand, is a voluntary arrangement where two employees agree, with the approval of their employer, to share the responsibilities for a single job on an ongoing basis. Although no data are available, it seems likely that many job sharing arrangements are initiated by employees who have family responsibilities or who want to return to school part time.

This note explores the cyclical nature of the program and profiles selected characteristics of program participants.

Cyclical phenomena

The Work Sharing Program is essentially cyclical in nature – the number of participants increases during economic downturns and declines as the economy improves (Table 1). The number of approved applications for Work Sharing fell from a high of 8,780 at the height of the 1981-82 recession, to a low of 1,802 in 1989, as the economy enjoyed sustained growth for a number of years. With the onset of the recent recession, the number of agreements signed jumped to 6,297 in 1990.

Similarly, the number of workers participating in the program decreased from a high of 202,037 (in 1982) to a low of 26,294 (in 1987) before climbing to 140,304 (in 1990). Averted layoffs, as a result of these Work Sharing agreements, fell from 87,000 in 1982 to 11,409 in 1987 and then jumped to 51,029 in 1990.

Program costs also followed this pattern, decreasing from a high of \$83.2 million in 1982, to \$16.8 million in 1988, and then rising to \$61.7 million in 1990 (measured in current dollars).

It is interesting to note that the participant/averted-layoff ratio, that is, the number of participants working reduced hours in order to avert one layoff, remained relatively stable at about 2.5 throughout this period.

The program's impact

The Work Sharing Program affects certain industries, demographic groups and regions more than others.

Manufacturing gets the lion's share of Work Sharing agreements. This is not surprising since this is the industry most affected by business cycles. In 1982, for example, 72% of the agreements involving some 90% of the employees on Work Sharing were in the manufacturing sector, far in excess of that industry's 20% share of total paid employment.¹ Available information for 1990 (mainly from Quebec and Ontario) shows that manufacturing continued to account for the largest share of program agreements and participants in that year.

The program's main participants appear to be aged 25 to 44.² In 1982, 50% of the participants were this age, similar to this

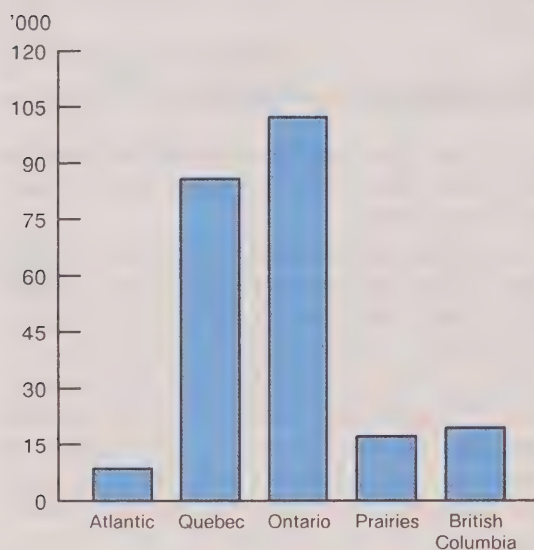
Table 1
Work Sharing Program, selected indicators, Canada

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991 Jan.- March
Applications approved	8,780	7,238	4,141	2,659	2,784	2,170	1,883	1,802	6,297	5,351
Participants (employees)	202,037	93,812	56,378	36,631	35,121	26,294	31,282	37,487	140,304	92,519
Averted-layoffs	87,000	34,836	22,215	16,404	14,923	11,409	12,813	16,493	51,029	32,830
Participant/ averted-layoff ratio	2.3	2.7	2.5	2.2	2.4	2.3	2.4	2.3	2.7	2.8
Expenditures (\$'000)	83,200	83,100	32,400	25,200	21,700	17,000	16,800	21,200	61,700	55,000

Source: Employment and Immigration Canada

Work Sharing Program participants, January 1990 to March 1991

Most participants worked in Central Canada.



Source: Employment and Immigration Canada

Note: Data for the Atlantic and Prairie provinces are not available.

group's share of total paid employment. On the other hand, younger workers (the 15 to 24 age group), were slightly overrepresented

in the Work Sharing Program. Some 28% of program participants in 1982 were 15 to 24 years old, but young workers accounted for only 23% of total paid employment.

The distribution of program participants by region has tended to follow the regional distribution of manufacturing employment (Table 2). Thus Ontario has always had the largest portion of employees in the Work Sharing Program. In 1990, for example, 54% of participants came from this province. Quebec had 27% of program participants in 1990, while British Columbia's share was 7%.

Recent trends

The first quarter of 1991 showed strong activity in the Work Sharing Program. A comparison of data for the first quarter of 1991 with that for all of 1989 (the last full year of economic growth) indicates a tripling in the number of applications, and a rise of about 150% in the number of program participants and expenditures.

Data for the five quarters from January 1, 1990 to March 31, 1991 show that Ontario still has the largest portion of employees in the Work Sharing Program, although Quebec's share has increased

Table 2

Work Sharing Program participants in all industries and paid workers in manufacturing, by region, 1982 and 1990

Region	1982				1990			
	Work Sharing Program participants*		Manufacturing paid workers**		Work Sharing Program participants*		Manufacturing paid workers**	
	number	%	'000	%	number	%	'000	%
Atlantic	5,051	3	99	5	4,780	3	103	5
Quebec	53,136	26	531	28	37,640	27	574	29
Ontario	94,755	47	942	50	76,463	54	955	48
Prairies	19,598	10	172	9	10,935	8	170	9
B.C.	29,497	15	154	8	10,486	7	170	9
Canada	202,037	100	1,898	100	140,304	100	1,972	100

Sources: *Employment and Immigration Canada; data for the Atlantic and Prairie provinces are not available separately.

** Labour Force Survey

recently. Manufacturing remains the dominant industry in the program, with two-

thirds of program participants coming from this sector in the first quarter of 1991. □

Notes

¹ The manufacturing sector's 72% share is based upon a sample of agreements that were signed by April 27, 1982. For information about the distribution of agreements by industry and region, see "Evaluation of the Work Sharing Program", Program Evaluation Branch, Employment and Immigration Canada, March 1984, p.28-29.

² See "A Preliminary Evaluation of the Work Sharing Program", Program Evaluation Branch, Employment and Immigration Canada, March 1983, p. 81.

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---. *Work sharing - a perspective*, Program Evaluation Branch, Ottawa, March 1983.

---. *A preliminary evaluation of the Work Sharing Program*, Program Evaluation Branch, Ottawa, March 1983.

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Labour Canada, *Barriers to worktime reduction in labour legislation*, November 1982.

Macoy, R. and M. Morand, *Short-time compensation: a formula for Work Sharing*, New York: Pergamon Press, 1984.

What's new?

Just released

New report on Canadians approaching retirement age

The Target Groups Project at Statistics Canada recently published *Canadians in the pre-retirement years: A profile of people aged 55-64*. This report will interest professionals who analyze, plan or deliver services to this group of Canadians, as well as firms in the private sector who want to assess the potential of this market. Characteristics examined include demographics, family status, health, labour force status, income, housing, and physical and social activity.

Interest in pre-retirement is on the rise, partly because people in this age group realize that such factors as their present financial position and their health will probably affect their quality of life as senior citizens. *Canadians in the pre-retirement years* portrays a group of people who, on the whole, are quite well off. Nevertheless, the transitional nature of this period between the "prime of life" and the "golden years" is also readily apparent. Highlights of the report include:

- 9% of the population are 55 to 64 years old.
- 94% are or have been married, and 9 in 10 of these married people have children.
- 16% of women and 11% of men live alone.

- Men are much more likely than women to die before they reach the age of 65.
- 61% of men and 34% of women work; 54% of these workers have an employer-sponsored pension plan.
- Of those men and women not in the workforce because they are retired, the majority receive pension or retirement benefits.
- Comparatively few families fall into the low-income bracket, but 38% of unattached individuals have low incomes as defined by Statistics Canada's Low Income Cut-Offs (LICOs).

All data are presented at the national level, with some selected series provided at the provincial level. When appropriate, comparisons with other Canadians are made; for example, labour market data are contrasted with those for 25 to 54 year-olds. Written for a non-specialist audience, the report makes considerable use of graphs and summary tables to support the analytical text. It draws on a variety of statistical sources, including the General Social Survey, the Labour Force Survey, demographic projections, the Census, *Health reports* and others.

Canadians in the pre-retirement years: A profile of people aged 55-64 (Catalogue No. 89-521E) is available for \$36.00 from Publication Sales, Ottawa K1A 0T6, or fax (613) 951-1584. □

Data on 1989 RRSP contributions

Updated figures on contributions to Registered Retirement Savings Plans (RRSPs) in 1989 are now available from the Small Area and Administrative Data Division. The 1989 *RRSP report* is derived from income tax files and covers: number of taxfilers and RRSP contributors, median age of contributors, and total dollars deposited in RRSPs in the tax year. Data are provided for small geographic areas at six different levels, such as postal walks, residential FSAs (Forward Sortation Areas) and rural routes.

The *RRSP report* will prove useful to banks, insurance companies and other financial institutions that are promoting RRSPs, RRIFs, annuities and other savings instruments. For example, 26% of all taxfilers in Toronto – almost 403,000 people – contributed to an RRSP in 1989. These contributions totalled just over \$1.5 billion, and the median age of the taxfilers making the deposits was 43. Among the other highlights of the *RRSP report* for Toronto FSAs are:

- The highest proportion of RRSP contributors, accounting for just over 42% of taxfilers, lived in the postal code area beginning "M5E"; with total contributions of about \$2.7 million, the average contribution was slightly more than \$5,200.
- The highest total contributions, at \$38.1 million, were made in M2J. However, the highest average contribution (more than \$6,300) was reported in M4N, where 38% of taxfilers paid into an RRSP.
- The lowest RRSP participation rate (14%) was recorded in M6E; the lowest average contribution (a little over \$2,400) was reported in M3N.

For more information about the 1989 *RRSP report* or other customized products available from Small Area and Administrative Data, call Customer Services, at (613) 951-9720, or fax (613) 951-4745. □

Membership in pension plans examined

There are almost 20,000 registered employer pension plans in Canada. Data on these plans and their membership, as of January 1, 1990, are now available in *Pension plans in Canada, 1990: statistical highlights and key tables*. Highlights of the findings are:

- Over 5 million workers participated in employer-sponsored pension plans in Canada, an increase of 3% over 1989; however, the number of pension plans dropped 1.5%.
- Plans with 100 or more members accounted for just 16% of all plans but almost 95% of all membership; 34% of all plans had fewer than five members and represented less than 0.5% of total membership (these small plans were primarily for executives and significant shareholders).
- Almost 91% of members participated in defined benefit plans that pay retirees a set amount, based on their earnings and years of service; most other participants belonged to defined contribution plans, in which the accumulated contributions plus investment income are used to purchase a pension at the time of retirement.
- Between 1980 and 1990, women accounted for over 95% of the growth in employer pension plan membership.

Pension plans in Canada, 1990: statistical highlights and key tables is available for \$30.00 from Johanne Pineau, Labour Division, at (613) 951-4034 or fax (613) 951-4087.

Note: Due to program cuts, pension plan data will not be updated until mid-1993, when information for 1992 will be available. □

New product line for SEPH

Analysts with the Survey of Employment, Payroll and Hours program (SEPH) have just completed the historical revision of the SEPH data series. Both the time series available and the dissemination program have been enhanced and a new line of products and services is available for data users.

The monthly SEPH estimates the total number of employees on company payrolls, their weekly and hourly earnings, and their paid hours. It provides these data at the national and provincial level for all industries at the detailed 3-digit level. SEPH data are used extensively in both the private and public sectors for such purposes as calculating escalation clauses or wage increases in long-term contracts, monitoring and adjusting benefits for social programs, and forecasting economic conditions.

The revised series now presents a more accurate portrait of trends in employment, earnings and hours for the period covering January 1983 to late 1991. In conjunction with the historical revision, the SEPH program has developed new products and services. Some of these new outputs include: seasonally adjusted data, fixed-weighted earnings indices, and more data disaggregated by large and small firms. These products are available on the 1980 Standard Industrial Classification (SIC) from 1983 on.

The changes to the data series itself prompted the redesign of the existing catalogued publication and the introduction of new non-catalogued reports. These include:

- *Employment, earnings and hours* (Catalogue 72-002), Monthly. Includes data at the 1, 2 and 3-digit SIC level, analytical highlights, and a feature article each quarter.
- *Annual averages* (non-catalogued). Includes data for all employees and hourly paid workers at the 1 and 2-digit SIC level.
- *Employment, earnings and hours 1983-1991* (non-catalogued). Revised time series on the 1980 SIC base.

Specialized data retrievals are also available from SEPH. The staff of Data Dissemination Services can provide custom tabulations to clients with specific requests or special needs. Custom tabulations can be produced in print or electronic formats.

For more information, contact Labour Division at (613) 951-4090, or fax (613) 951-4087. □

Statistics on foreign economic conditions

The coming year marks the beginning of a new era of international trade relations. The elimination of trade barriers within the European Community, the proposed entry of Mexico into free trade with Canada and the United States, and the conclusion of the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) will profoundly change our economic horizons in the next 5 to 10 years.

In light of these major developments, Canadian industries need to expand their economic knowledge of other countries: statistics about the traditional major trading partners (the United States, United Kingdom and Japan) are no longer sufficient. The Organisation for Economic Co-operation and Development (OECD) publishes a great deal of data on the economic conditions prevailing in 25 industrialized countries. Five of these regular publications are briefly described in the paragraphs below.

Quarterly labour force statistics. Tables and graphs cover employment and unemployment by sex, age group, and three industrial aggregates (agriculture, industry, services).

OECD employment outlook, Annual. Analysis of labour market trends, including key developments and short-term forecasts. Special topics are also explored, for instance, educational attainment and labour force activity.

Main economic indicators, Monthly. Data tables and graphs cover national accounts, industrial activity, labour, wages and prices, finance, trade and balance of payments. Part one publishes national data grouped by indicator. Part two publishes indicators grouped by country.

OECD economic outlook, Semi-annual. Analysis of current economic trends and conditions, with special focus on the impact of domestic government policies and international developments on each country's economy.

Indicators of industrial activity, Quarterly. Data on industrial output, shipments, new orders, producer prices and employment levels in mining, manufacturing and utilities.

The OECD also publishes a wide variety of reports on other topics, from financial market statistics to environmental assessments. OECD publications are distributed by the following companies: Renouf Publishing, at (613) 238-8985 in Ottawa and (416) 363-3171 in Toronto; Federal Publications/Les Publications Fédérales, at (416) 581-1552 in Toronto and (514) 954-1633 in Montreal; and Les Éditions La Liberté, at (418) 658-3763 in Sainte-Foy, Quebec. □

Distinguishing characteristics of foreign high technology acquisitions in Canada's manufacturing sector

John R. Baldwin and Paul K. Gorecki
Analytical Studies Branch
Research Paper Series, No. 36

High technology industries attract considerable public attention because they are held to be the key to future economic growth. The first part of this study tests the accuracy of the common wisdom that high technology industries are powerful engines of economic growth; the second examines the belief that Canadian-owned firms are put at risk when a foreign-owned firm enters the domestic market. The study covers the years 1970 to 1986.

Using an OECD definition of high technology, the authors classify ten industries in Canada as high technology, among them aircraft and aircraft parts, communications equipment, pharmaceuticals and electrical industrial equipment. The study examines five characteristics that are commonly said to distinguish high technology from other manufacturing industries. It finds that:

- High technology firms spent 4.4% of sales on research and development (R & D), including expenditure on

foreign technology as well as R&D conducted in Canada, considerably more than other industries.

- During the 1970s and early 1980s, the proportion of foreign ownership in the Canadian manufacturing sector as a whole declined, but it dropped faster in high technology industries than in any other industry.
- The volume of trade relative to output was higher and tariffs were lower.
- Firm size was smaller, even though the high technology industries were more concentrated than other manufacturing industries.
- Growth, as measured by the real value of shipments weighted by industry size, was high but not as high as in other manufacturing industries; wages and salaries were virtually the same as in other industries.

This last finding contradicts the conventional wisdom about the virtues of high technology as an employer, and the authors conclude that in Canada "high technology industries ... appear not to be the engine of high income jobs, although a greater percentage of employment therein was in the white-collar class."

As to any differences between foreign-owned and Canadian-owned firms, the study used four characteristics to assess their performance: firm and plant specialization, labour productivity, wages and salaries and the importance of white-collar jobs. Results show that although foreign-owned firms in all manufacturing industries outshone their Canadian-owned counterparts in every category except wages and salaries, the difference was much less pronounced in high technology industries. In light of this result, the authors believe that Canadian high

technology firms do not labour under a "particularly large disadvantage" when required to compete with foreign-owned companies.

To obtain free copies of this research paper, or for further information about the Analytical Studies Branch research program, contact Marie-Claire Couture at (613) 951-3778. □

Industry efficiency and plant turnover in the Canadian manufacturing sector

John R. Baldwin
Analytical Studies Branch
Research Paper Series, No. 37

Underlying the current concern about the competitiveness of Canadian industries, is the assumption that competitiveness relies upon the efficient production of goods and services. This paper uses longitudinal data on manufacturing firms in the 1970s to assess efficiency in this sector, the factors that influence it, and the impact that plant turnover (entry and exit of firms) has on the general level of efficiency in an industry.

Defining efficiency to be the best use of a firm's inputs – the first part of the study shows that:

- Efficiency is lower when a high proportion of an industry's sales is controlled by a firm whose main interests lie in another industry or industries.
- Plant specialization does not significantly improve efficiency, but product differentiation has a decidedly negative effect.
- Unionization has only a slightly negative effect on efficiency, but the use of part-time workers is definitely a positive influence.

- Efficiency is adversely affected by a firm's diversification across industries, by multiple plant operations and by high concentration in the industry.

Efficiency is closely allied to levels of productivity in individual establishments, since the efficiency with which a plant produces goods affects a firm's share of the market. In the 1970s, relative productivity rose in plants that gained market share and fell in those that lost share. During this period, plant efficiency improved as a result of turnover. Entry and exit of firms into or out of the industry served to increase efficiency.

The author argues that the rate of technical progress, coupled with a firm's capacity to adapt to new technologies, governs the relationship between turnover and level of efficiency. The study found that firm turnover was related to the same set of industry characteristics that affect efficiency.

To obtain free copies of this research paper, or for further information about the Analytical Studies Branch research program, contact Marie-Claire Couture at (613) 951-3778. □

New surveys

October 1991: Survey on Technological Change

To assess Canadian workers' attitudes towards changes in their jobs, this survey used a small sample of approximately 3,000 respondents selected from the Labour Force Survey. The sample contained: 1,000 blue-collar workers; 1,000 workers in either the steel, the pulp and paper, or the telecommunications industries; and 1,000 workers selected at random regardless of

industry or occupation. Data were collected on such topics as:

- Incidence of changes in tasks or duties required by the job, changes in the machinery and equipment used in the job and/or at the workplace.
- Experience of layoffs or job losses.
- Retraining.
- Willingness to move to another region, change jobs or take a pay cut to remain employed.
- Attitudes towards union, business, government and individual responsibility to maintain employment levels.

The Survey on Technical Change was commissioned by a group of researchers from McGill University and Concordia University in Canada, and UMEA and Gothenburg Universities in Sweden. An identical survey is being held in Sweden. Once the data have been processed, analysts will be able to compare the attitudes of Swedish and Canadian workers about the same issues. Preliminary results are expected by the summer of 1992. For information, contact Scott Buchanan, Special Surveys Group, at (613) 951-4597. □

November 1991: Survey of Work Arrangements

To measure the prevalence of "non-standard" work arrangements among Canada's 12 million workers, this survey used a sample of roughly 60,000 workers drawn from the Labour Force Survey. Data were collected on the type of work arrangement in the respondents' principal paid job and, if applicable, in their second job. The information gathered also identifies

the types of industries and occupations in which non-standard workers are most commonly employed, and includes data on the rate of pay. Non-standard work arrangements include:

- Compressed/extended workweek, week-end work.
- Shift work, on-call work.
- Flexitime.
- Home-based work.
- Temporary work.

Reasons why people work "non-traditional" hours are also explored. Such arrangements may meet the worker's needs for child care or other family-related duties, allow time to attend school, or be required by the employer. The extent of paid overtime work, including the rate of overtime pay, as well union membership, is also examined.

Respondents with a second job, their work arrangements, as well as reasons for holding a second job, are also identified. Reasons for multiple jobholding include meeting financial obligations, gaining occupational experience, building up a business, or enjoyment.

Preliminary survey results are expected in late spring 1992. For more information, contact Ernest Akyeampong, Labour and Households Surveys Analysis Division, at (613) 951-4624. □

We welcome your views on articles and other items that have appeared in *Perspectives on labour and income*. Additional insights on the data are also welcome, but to be considered for publication, communications should be factual and analytical. We encourage readers to inform us about their current research projects, new publications, data sources and upcoming events relating to labour and income.

Statistics Canada reserves the right to select and edit items for publication. Correspondence, in either official language, should be addressed to: Susan Crompton, Forum and What's new? Editor, *Perspectives on labour and income*, 5-A Jean Talon Building, Statistics Canada, Ottawa, K1A 0T6, or call (613) 951-0178.

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This index lists articles published in Perspectives on labour and income since its inception in the Summer of 1989. The index will be updated and published annually in subsequent Winter issues.

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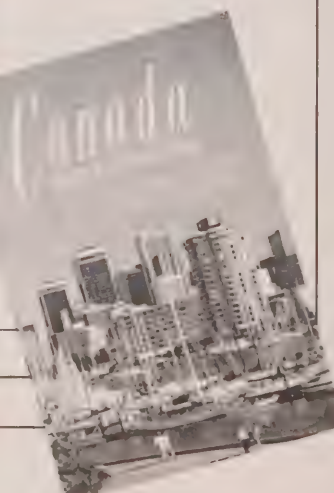
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Key labour and income facts

The following selection of labour and income indicators is drawn from 12 sources and includes published and unpublished annual data. These indicators appear in every issue.

The latest available annual data are always shown; as results become available, the indicators are updated so that every issue contains new data. An indicator updated since the last issue is "flagged" with an asterisk.

Data sources

The indicators are derived from the following sources:

- 1-11 & 15 Labour Force Survey**
Frequency: Monthly
Contact: Doug Drew (613) 951-4720
- 12-14 Labour Market Activity Survey**
Frequency: Annual
Contact: Richard Veevers (613) 951-4617
- 16 Absence from Work Survey**
Frequency: Annual
Contact: Denis Lefebvre (613) 951-4600
- 17 Workers' Compensation statistics**
Frequency: Annual
Contact: Joanne Proulx (613) 951-4040
- 18 Help-wanted Index**
Frequency: Monthly
Contact: André Picard (613) 951-4045
- 19-21 Unemployment Insurance statistics**
Frequency: Monthly
Contact: André Picard (613) 951-4045

- 22-29 Survey of Employment, Payrolls and Hours**
Frequency: Monthly
Contact: Howard Krebs (613) 951-4063
- 30-32 Labour Canada, Major Wage Settlements**
Frequency: Quarterly
Contact: Sulaiman Khan (819) 953-4234
- 33-35 Labour Income (Revenue Canada-Taxation-based statistics, Survey of Employment, Payrolls and Hours and other surveys)**
Frequency: Quarterly
Contact: Ed Bunko (613) 951-4048
- 36-46 Survey of Consumer Finances**
Frequency: Annual
Contact: Kevin Bishop (613) 951-2211
- 47-53 Household Facilities and Equipment Survey**
Frequency: Annual
Contact: Penny Barclay (613) 951-4634
- 54-55 Small Area and Administrative Data**
Frequency: Annual
Contact: Customer Services (613) 951-9720

Notes on the method of deriving certain indicators are given at the end of the table.

Additional data

The table provides at the most 2 years of data for each indicator. A longer time series (generally 10 years) for this set of indicators can be obtained on request, on paper or diskette, at a cost of \$50. (A more extensive explanation of the indicators is also available.) This 10-year data set is updated annually in April. For information, contact Gilles Myre at (613) 951-4627.

Key labour and income facts

No.	Unit	Year	Canada	Nfld.	P.E.I.	N.S.	N.B.
Labour market							
1 Labour force	'000	1989	13,503	238	63	414	325
		1990	13,681	242	65	424	331
Change	%		1.3	1.6	2.4	2.3	1.7
2 Participation rate	%	1989	67.0	55.7	65.0	61.2	59.5
		1990	67.0	56.0	66.0	62.1	59.8
3 Employed	'000	1989	12,486	201	54	373	284
		1990	12,572	201	55	379	291
Change	%		0.7	—	1.5	1.6	2.2
4 Proportion of employed working part time	%	1989	15.1	11.5	15.7	16.0	14.9
		1990	15.4	11.3	15.5	15.8	14.6
5 Proportion of part-timers wanting full-time work	%	1989	22.2	55.1	36.1	31.5	37.5
		1990	22.4	52.3	35.5	33.1	37.9
6 Unemployed	'000	1989	1,018	38	9	41	41
		1990	1,109	41	10	45	40
Change	%		9.0	10.1	7.9	8.8	-1.4
7 Official unemployment rate	%	1989	7.5	15.8	14.1	9.9	12.5
		1990	8.1	17.1	14.9	10.5	12.1
Alternative measures of unemployment							
8 Unemployed 14 or more weeks as a proportion of the labour force	%	1989	2.9	6.8	5.3	3.8	4.9
		1990	3.1	8.3	5.6	4.2	4.6
9 Unemployment rate:							
– of persons heading families with children under age 16	%	1989	6.8	15.6	14.2	9.2	11.8
		1990	7.3	16.5	15.3	9.3	11.2
– excluding full-time students	%	1989	7.4	15.8	14.6	9.8	12.4
		1990	8.0	17.2	15.4	10.5	12.0
– including full-time members of the Canadian Armed Forces	%	1989	7.5	15.7	13.9	9.6	12.3
		1990	8.1	17.0	14.7	10.2	11.9
– of the full-time labour force	%	1989	9.0	18.6	17.4	12.1	15.0
		1990	9.6	19.7	18.2	12.8	14.6
– of the part-time labour force	%	1989	9.7	15.8	8.2	12.3	14.4
		1990	10.1	15.6	7.6	12.9	13.5
– including persons on the margins of the labour force	%	1989	8.2	18.9	16.1	10.8	14.1
		1990	8.7	20.3	16.4	11.3	14.0
10 Underutilization rate based on hours lost through unemployment and underemployment	%	1989	9.5	19.3	17.8	12.8	15.6
		1990	10.2	20.3	18.5	13.5	15.4
11 Proportion unemployed 6 months or longer	%	1989	20.1	21.3	14.1	18.0	19.2
		1990	18.4	26.8	15.8	18.5	17.6

See notes at end of table.

Key labour and income facts

Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Year	Unit	No.
3,343	5,214	538	482	1,308	1,578	..	..	1989	'000	1
3,399	5,268	544	483	1,324	1,601	..	..	1990		
1.7	1.0	1.1	0.2	1.2	1.5	..	..		%
64.0	69.8	67.0	66.2	72.4	66.8	..	..	1989	%	2
64.3	69.4	67.6	66.8	72.1	66.0	..	..	1990		
3,031	4,949	498	446	1,214	1,435	..	..	1989	'000	3
3,055	4,937	505	449	1,231	1,469	..	..	1990		
0.8	-0.3	1.4	0.7	1.4	2.4	..	..		%
13.5	15.5	17.2	16.6	15.3	16.2	..	..	1989	%	4
13.8	15.8	18.2	17.1	15.0	16.7	..	..	1990		
31.8	13.5	21.9	27.9	19.3	25.8	..	..	1989	%	5
33.1	14.5	21.8	27.5	19.3	21.4	..	..	1990		
311	264	41	36	94	144	..	..	1989	'000	6
345	331	39	34	93	132	..	..	1990		
10.7	25.1	-2.9	-5.7	-0.9	-8.0	..	..		%
9.3	5.1	7.5	7.4	7.2	9.1	..	..	1989	%	7
10.1	6.3	7.2	7.0	7.0	8.3	..	..	1990		
4.3	1.5	3.0	3.1	2.5	3.6	..	..	1989	%	8
4.5	2.0	2.8	2.5	2.2	2.9	..	..	1990		
										9
7.8	4.7	6.0	7.4	6.5	8.3	..	..	1989	%	
8.6	5.6	5.9	6.7	6.5	7.7	..	..	1990		
9.3	4.9	7.3	7.3	7.0	8.9	..	..	1989	%	
10.1	6.0	6.9	6.9	6.8	8.1	..	..	1990		
9.3	5.0	7.5	7.4	7.1	9.0	..	..	1989	%	
10.1	6.2	7.2	7.0	7.0	8.2	..	..	1990		
11.3	5.8	9.2	9.6	8.3	10.8	..	..	1989	%	
12.2	7.1	9.1	9.1	8.1	9.8	..	..	1990		
10.7	8.0	9.8	9.7	9.9	12.3	..	..	1989	%	
11.8	9.1	8.9	9.5	10.5	10.4	..	..	1990		
10.5	5.3	8.0	8.0	7.5	9.5	..	..	1989	%	
11.3	6.5	7.7	7.5	7.3	8.6	..	..	1990		
11.7	6.2	9.7	10.2	8.9	11.3	..	..	1989	%	10
12.6	7.7	9.7	9.8	8.7	10.4	..	..	1990		
27.0	13.2	20.6	20.4	17.4	20.6	..	..	1989	%	11
23.7	13.8	19.3	16.7	15.3	16.5	..	..	1990		

See notes at end of table.

Key labour and income facts

No.		Unit	Year	Canada	Nfld.	P.E.I.	N.S.	N.B.
Other labour market indicators								
12	Employed at some time in the year, men, age 16 to 69	'000	1987	7,584	152	36	235	191
	– as proportion of male population age 16 to 69	%		86.5	80.9	87.8	82.2	81.6
		'000	1988	7,688	157	37	241	195
		%		86.6	82.6	88.1	83.7	82.3
	Employed at some time in the year, women, age 16 to 69	'000	1987	6,042	110	30	191	153
	– as proportion of female population age 16 to 69	%		67.1	57.9	71.4	63.0	63.0
		'000	1988	6,337	120	32	197	164
		%		69.7	62.2	74.4	64.6	66.9
13	Unemployed at some time in the year, men, age 16 to 69	'000	1987	1,497	59	11	59	59
	– as proportion of male population age 16 to 69	%		17.1	31.4	26.8	20.6	25.2
		'000	1988	1,366	51	11	89	55
		%		15.4	26.8	26.2	17.0	23.2
	Unemployed at some time in the year, women, age 16 to 69	'000	1987	1,345	46	9	55	48
	– as proportion of female population age 16 to 69	%		14.9	24.2	21.4	18.2	19.8
		'000	1988	1,247	44	10	49	43
		%		13.7	22.8	23.3	16.1	17.6
14	Full-time, full-year male paid workers	'000	1987	4,035	55	14	115	89
			1988	4,017	63	13	121	87
	Full-time, full-year female paid workers	'000	1987	2,528	36	11	74	52
			1988	2,597	35	11	76	60
15	Days lost per full-time worker per year through illness or for personal reasons	days	1989	9.4	9.6	8.1	8.6	9.6
			1990	9.4	10.1	7.3	9.1	9.3
16	Proportion of paid workers absent two or more consecutive weeks because of illness or accident	%	1988	6.4	5.1	5.7	4.7	6.0
			1989	6.7	6.2	5.2	5.4	7.4
17	Workers receiving workers' compensation for time-loss injuries	'000	1988	618	10	2	11	12
	Change	%	1989	621	11	2	14	13
				0.5	6.2	0.6	23.9	8.0
18	Help-wanted index (1981 = 100)		1989	152	196			
			1990	115	164			

See notes at end of table.

Key labour and income facts

Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Year	Unit	No.
1,921	2,886	305	280	718	859	..	..	1987	'000	12
83.5	89.2	88.2	87.5	88.3	85.6	..	..		%
1,962	2,909	303	277	729	877	..	..	1988	'000	
84.7	88.4	87.3	87.4	88.5	85.4	..	..		%
1,434	2,367	264	219	592	682	..	..	1987	'000	
60.2	71.2	72.7	68.7	73.4	66.7	..	..		%
1,542	2,462	257	228	621	716	..	..	1988	'000	
64.4	72.9	72.2	71.9	75.7	68.5	..	..		%
434	432	57	42	150	193	..	..	1987	'000	13
18.9	13.3	16.5	13.1	18.5	19.2	..	..		%
400	404	53	43	128	172	..	..	1988	'000	
17.3	12.3	15.3	13.6	15.5	16.7	..	..		%
375	424	51	40	127	171	..	..	1987	'000	
15.7	12.8	14.0	12.5	15.7	16.7	..	..		%
362	361	51	39	114	173	..	..	1988	'000	
15.1	10.7	14.3	12.3	13.9	16.6	..	..		%
1,028	1,666	148	128	370	423	..	..	1987	'000	14
1,014	1,661	153	123	356	425	..	..	1988		
610	1,052	107	81	239	265	..	..	1987	'000	
638	1,087	104	79	248	259	..	..	1988		
10.2	9.6	8.8	8.6	8.2	8.4	..	..	1989	days	15
10.5	9.5	9.0	8.0	7.3	8.5	..	..	1990		
8.1	6.2	6.2	5.2	5.5	5.5	..	..	1988	%	16
7.7	6.8	5.0	5.4	5.1	6.4	..	..	1989		
218	208	23	15	43	73	..	1	1988	'000	17
219	201	22	14	45	80	..	1	1989		
0.3	-3.6	-4.4	-6.7	3.3	8.4	..	-3.7		%	
173	167	90			128	..	..	1989		18
129	111	80			117	..	..	1990		

See notes at end of table.

Key labour and income facts

No.		Unit	Year	Canada	Nfld.	P.E.I.	N.S.	N.B.
Unemployment insurance								
19	Total beneficiaries	'000	1988	1,015	71	13	50	57
			1989	1,030	76	14	53	58
	Change	%		1.5	6.6	6.8	5.3	0.4
20	Total beneficiaries as a proportion of contributors	%	1988	7.9	28.7	21.2	12.4	17.6
			1989	7.8	29.9	21.7	12.7	17.1
21	Regular beneficiaries without reported earnings	'000	1988	780	58	10	38	47
	Change	%	1989	785	61	10	39	47
				0.6	5.7	5.8	1.6	-1.1
Earnings (including overtime) and hours								
22	Average weekly earnings in current dollars	\$	1989	486.87	465.80	400.82	432.86	442.80
			1990	512.79	484.61	419.63	458.50	463.45
	Change	%		5.3	4.0	4.7	5.9	4.7
23	Average weekly earnings in 1981 dollars	\$	1989	322.43	324.83	283.06	295.47	299.59
			1990	324.14	323.94	282.20	297.92	299.77
	Change	%		0.5	-0.3	-0.3	0.8	0.1
24	Average weekly earnings of salaried employees in current dollars	\$	1989	598.87	559.86	522.94	537.24	552.16
			1990	635.97	586.43	548.55	580.85	580.34
	Change	%		6.2	4.7	4.9	8.1	5.1
25	Average weekly earnings of salaried employees in 1981 dollars	\$	1989	396.60	390.42	369.31	366.72	373.59
			1990	402.00	392.00	368.90	377.42	375.38
	Change	%		1.4	0.4	-0.2	2.9	0.5
26	Average weekly earnings of hourly paid employees in current dollars	\$	1989	388.20	363.16	264.60	341.66	362.48
			1990	403.41	372.40	280.59	357.91	371.54
	Change	%		3.9	2.5	6.0	4.8	2.5
27	Average weekly earnings of hourly paid employees in 1981 dollars	\$	1989	257.09	253.25	186.86	233.22	245.25
			1990	255.00	248.93	188.70	232.56	240.32
	Change	%		-0.8	-1.7	1.0	-0.3	-2.0
28	Average weekly hours of hourly paid employees	hrs	1989	31.8	34.8	31.7	32.7	34.1
			1990	31.5	34.6	31.5	32.2	33.7
29	Average weekly overtime hours of hourly paid employees	hrs	1989	1.2	1.6	0.4	0.8	1.0
			1990	1.1	1.5	0.5	0.8	0.9
Major wage settlements								
30	Number of agreements		1989	438	7	4	15	5
			1990	486	11	1	7	17
31	Number of employees	'000	1989	983	11	3	19	12
			1990	1,129	18	-	15	28
32	Increase in base rate on annual basis	%	1989	5.3	5.7	4.7	5.5	4.5
			1990	5.8	7.5	5.8	6.3	6.0

See notes at end of table.

Key labour and income facts

Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Year	Unit	No.
323	216	35	29	78	139	2	2	1988	'000	19
337	214	35	29	78	134	2	2	1989		
4.3	-1.2	2.1	-0.7	-0.8	-3.4	3.6	-1.9		%	
10.2	4.2	7.1	7.5	6.5	9.9	9.8	4.8	1988	%	20
10.4	4.0	7.2	7.5	6.3	9.0	4.8	8.8	1989		
259	151	26	22	60	106	1	1	1988	'000	21
270	147	26	22	59	101	1	1	1989		
4.4	-2.7	1.2	-0.5	-1.4	-5.8	-2.5	-8.3		%	
472.82	509.08	445.08	425.99	484.47	491.63	585.91	663.86	1989	\$	22
502.02	535.78	462.78	445.80	509.86	515.91	612.22	705.48	1990		
6.2	5.2	4.0	4.7	5.2	4.9	4.5	6.3		%	
312.71	326.33	299.11	289.59	339.98	342.60	..	..	1989	\$	23
318.54	327.89	297.23	290.42	338.33	340.98	..	..	1990		
1.9	0.5	-0.6	0.3	-0.5	-0.5	..	..		%
564.69	631.12	562.52	558.45	617.83	594.35	713.95	728.63	1989	\$	24
602.37	670.17	590.77	581.86	655.15	628.93	747.27	776.47	1990		
6.7	6.2	5.0	4.2	6.0	5.8	4.7	6.6		%	
373.47	404.56	378.04	379.06	433.56	414.18	..	..	1989	\$	25
382.21	410.14	379.43	379.74	434.74	415.68	..	..	1990		
2.3	1.4	0.4	-0.2	0.3	0.4	..	..		%
387.87	403.25	345.85	309.83	356.00	412.73	439.74	568.71	1989	\$	26
406.93	415.59	356.20	327.33	373.65	432.05	446.27	610.01	1990		
4.9	3.1	3.0	5.6	5.0	4.7	1.5	7.3		%	
256.53	258.49	232.43	210.63	249.82	287.62	..	..	1989	\$	27
258.20	254.34	228.77	213.24	247.94	285.56	..	..	1990		
0.7	-1.6	-1.6	1.2	-0.8	-0.7	..	..		%
32.6	32.0	31.2	28.8	30.5	30.5	32.1	33.8	1989	hrs	28
32.4	31.4	31.2	28.7	30.2	30.3	35.2	35.5	1990		
1.0	1.3	0.9	0.8	1.5	1.1	1.9	3.4	1989	hrs	29
0.9	1.1	0.9	0.9	1.6	1.1	2.2	3.8	1990		
37	155	7	16	51	49	..	..	1989		30
94	201	14	8	55	29	..	..	1990		
209	237	10	21	83	106	..	..	1989	'000	31
395	393	14	20	103	29	..	..	1990		
5.3	6.4	4.6	2.9	3.9	7.0	..	..	1989	%	32
4.8	6.8	5.6	4.0	5.6	6.9	..	..	1990		

See notes at end of table.

Key labour and income facts

No.		Unit	Year	Canada	Nfld.	P.E.I.	N.S.	N.B.
Labour income								
33	Labour income in current dollars	\$ million	1988	325.2	4.5	1.0	8.2	6.3
			1989	354.9	4.8	1.0	8.8	6.9
	Change	%		9.1	6.8	7.7	7.2	8.2
34	Labour income per employee in current dollars	\$	1988	30,327	26,312	22,360	25,594	25,402
			1989	32,326	26,715	23,481	26,798	27,007
	Change	%		6.6	1.5	5.0	4.7	6.3
35	Labour income per employee in 1981 dollars	\$	1988	21,090	18,998	16,393	18,256	17,990
			1989	21,408	18,630	16,583	18,292	18,272
	Change	%		1.5	1.9	1.2	0.2	1.6
36	Net income from self-employment as a proportion of money income	%	1988	5.3	3.5	7.8	5.7	4.3
			1989	5.8	3.9	9.1	5.9	4.2
Earnings of full-time, full-year workers								
37	Average earnings of men working full time, full year	\$	1988	33,600	27,200	23,600	30,500	29,100
			1989	35,100	30,600	25,900	31,900	31,200
	Change	%		4.5	12.6	9.8	4.6	7.2
38	Average earnings of women working full time, full year	\$	1988	21,900	20,400	16,900	19,600	20,200
			1989	23,100	21,700	19,800	21,100	19,400
	Change	%		5.4	6.1	16.7	7.6	-3.8
39	Ratio of female-to-male earnings	%	1988	65.3	75.1	71.7	64.4	69.5
			1989	65.8	70.8	76.2	66.2	62.3
Family income								
40	Average family income	\$	1988	46,200	36,100	34,500	39,700	37,300
			1989	50,100	39,600	38,700	43,100	40,700
41	Median family income	\$	1988	41,200	32,900	30,700	36,400	33,300
			1989	44,500	35,700	34,500	37,600	36,300
42	Average income of unattached individuals	\$	1988	19,600	17,000	14,400	16,000	16,100
			1989	21,100	19,000	14,400	17,700	17,200
43	Median income of unattached individuals	\$	1988	15,000	12,900	12,000	11,300	12,100
			1989	16,600	14,700	11,700	12,400	13,000
44	Average family taxes	\$	1988	8,600	5,100	4,700	6,700	5,800
			1989	9,600	6,200	5,900	7,400	6,600
45	Average family income after tax	\$	1988	37,600	30,900	29,800	33,000	31,500
			1989	40,400	33,500	32,800	35,700	34,000

See notes at end of table.

Key labour and income facts

Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Year	Unit	No.
77.5	140.3	11.1	8.6	30.0	35.9	.4	1.0	1988	\$ million	33
83.2	154.7	11.7	9.0	32.6	40.3	.4	1.0	1989		
7.3	10.2	5.6	4.3	8.5	12.3	7.0	6.2			
29,183	32,434	26,601	24,969	29,651	30,336	1988	\$	34
30,831	35,124	27,749	26,470	31,101	31,987	..	..	1989
5.7	8.3	4.3	6.0	4.9	5.4	..	..	
20,126	22,004	18,720	17,721	21,675	22,095	1988	\$	35
20,391	22,516	18,648	17,995	21,825	22,291	..	..	1989
1.3	2.3	-0.4	1.5	0.7	0.9	..	..	
4.4	4.9	7.4	9.9	6.8	5.7	1988	%	36
4.4	6.4	5.7	10.8	5.6	5.9	..	..	1989
31,700	35,900	29,700	28,400	33,800	34,500	1988	\$	37
34,000	37,400	31,600	27,900	34,400	35,600	..	..	1989
7.1	4.2	6.3	-1.8	1.8	3.3	..	..	
20,900	23,300	20,200	19,200	22,100	21,300	1988	\$	38
21,200	25,200	20,700	20,400	22,800	22,600	..	..	1989
1.3	8.4	2.6	6.0	3.4	6.2	..	..	
65.9	64.8	67.9	67.5	65.3	61.8	1988	%	39
62.4	67.4	65.6	72.9	66.3	63.6	..	..	1989
41,300	52,800	43,100	40,400	46,300	45,300	1988	\$	40
44,900	57,300	46,600	43,000	49,700	49,400	..	..	1989
36,900	47,300	37,400	35,400	41,700	42,000	1988	\$	41
40,200	50,500	41,300	38,100	44,900	46,000	..	..	1989
17,400	21,700	17,100	17,100	20,500	21,000	1988	\$	42
18,300	24,100	19,200	18,700	20,900	22,300	..	..	1989
12,100	17,400	13,800	13,200	15,700	17,300	1988	\$	43
13,700	20,400	14,900	14,100	16,600	18,600	..	..	1989
7,900	10,100	7,700	7,000	8,300	8,100	1988	\$	44
8,900	11,400	8,600	7,700	9,200	9,300	..	..	1989
33,500	42,700	35,400	33,300	38,000	37,200	1988	\$	45
36,000	45,900	38,000	35,300	40,500	40,100	..	..	1989

See notes at end of table.

Key labour and income facts

No.		Unit	Year	Canada	Nfld.	P.E.I.	N.S.	N.B.
46	Proportion below the low income cut-off (1978 base):							
-	families	%	1988	10.5	15.5	10.0	10.8	12.6
			1989	9.6	12.8	9.0	11.4	11.9
-	unattached individuals	%	1988	33.1	35.5	33.2	39.4	35.7
			1989	30.5	32.0	35.1	34.7	36.3
-	persons (population)	%	1988	13.1	16.7	12.3	13.4	14.5
			1989	12.2	14.5	11.6	13.4	13.8
-	children (less than 16 years)	%	1988	15.4	20.7	12.6	15.2	18.3
			1989	14.6	19.7	13.9	16.6	17.6
-	elderly (65 years and over)	%	1988	17.2	19.2	17.5	16.9	15.0
			1989	15.9	13.8	14.6	13.8	12.8
Households and dwellings								
47	Average household income	\$	1988	40,700	34,200	31,100	35,400	34,300
			1989	43,800	37,500	34,300	37,700	36,800
48	Proportion of households with:							
-	VCRs	%	1989	58.8	59.9	50.0	62.1	57.0
			1990	66.3	67.6	62.2	66.7	64.0
-	microwaves	%	1989	63.4	52.1	47.7	62.5	59.9
			1990	68.2	56.6	57.8	67.9	66.8
-	two or more automobiles	%	1989	25.0	12.6	22.7	21.0	18.6
			1990	24.7	16.2	26.7	19.8	21.5
-	vans and trucks	%	1989	25.5	32.3	31.8	28.2	34.3
			1990	23.4	32.4	31.1	23.9	31.6
-	air conditioners	%	1989	24.6	...	...	2.6	5.8
			1990	24.4	...	...	3.5	5.7
49	Proportion of owner-occupied dwellings	%	1989	63.3	79.6	75.0	71.5	75.2
			1990	63.7	79.2	71.1	72.0	75.3
50	Proportion of all owner-occupied dwellings that are mortgage free	%	1989	50.6	69.9	54.5	56.6	59.3
			1990	51.1	70.8	59.4	57.6	58.1
51	Number of occupied dwellings in need of repair	'000	1989	2,369	52	14	94	79
			1990	2,561	54	17	112	81
52	Dwellings in need of repair as a proportion of all occupied dwellings	%	1989	25.0	31.1	31.8	30.4	32.6
			1990	26.6	31.3	37.7	35.2	32.8
53	Median rent-to-income ratio	%	1989	21	17	23	21	19
			1990	20	17	25	23	19

See notes at end of table.

Key labour and income facts

Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Year	Unit	No.
										46
13.5	7.5	11.1	13.6	10.7	10.1	..	..	1988	%	
11.4	7.0	11.0	12.6	11.0	9.7	..	..	1989	%	
42.7	26.9	33.5	29.3	30.8	30.6	..	..	1988	%	
41.0	23.5	30.0	30.4	30.7	25.2	..	..	1989	%	
16.8	9.5	14.8	16.8	13.8	13.2	..	..	1988	%	
15.1	8.8	14.5	16.1	13.9	11.7	..	..	1989	%	
17.2	11.9	19.7	22.6	16.9	15.2	..	..	1988	%	
15.2	11.3	21.5	22.3	16.8	13.7	..	..	1989	%	
25.2	12.6	16.0	13.4	15.6	18.4	..	..	1988	%	
30.7	9.7	11.0	10.7	14.4	12.5	..	..	1989	%	
										47
36,000	46,900	37,000	35,100	41,200	39,100	..	..	1988	\$	
39,200	50,600	40,000	37,100	43,800	41,800	..	..	1989	\$	
										48
54.4	62.1	56.7	53.4	64.0	57.3	..	..	1989	%	
63.2	69.0	63.1	60.6	71.6	64.0	..	..	1990	%	
59.6	64.5	65.8	71.2	71.8	62.2	..	..	1989	%	
65.5	68.2	68.3	74.9	76.9	68.3	..	..	1990	%	
19.9	29.3	21.9	24.6	29.4	25.7	..	..	1989	%	
21.6	26.5	22.2	25.1	29.7	26.7	..	..	1990	%	
15.6	21.7	32.1	44.1	41.6	34.0	..	..	1989	%	
13.8	20.5	29.1	37.2	37.7	32.3	..	..	1990	%	
14.7	43.8	43.9	31.0	8.6	7.4	..	..	1989	%	
13.3	44.9	43.8	32.1	6.9	6.1	..	..	1990	%	
54.8	64.6	67.4	71.8	64.6	65.2	..	..	1989	%	49
55.2	65.6	67.8	70.7	65.8	64.2	..	..	1990	%	
46.9	49.4	55.4	61.1	48.3	50.2	..	..	1989	%	50
46.5	50.6	56.3	58.9	47.2	52.0	..	..	1990	%	
572	817	113	101	238	287	..	..	1989	'000	51
613	910	112	112	261	290	..	..	1990	'000	
22.8	24.0	29.5	28.2	27.5	24.1	..	..	1989	%	52
24.2	26.2	28.9	31.3	30.0	23.9	..	..	1990	%	
20	21	21	22	21	22	..	..	1989	%	53
19	20	20	21	20	23	..	..	1990	%	

See notes at end of table.

Key labour and income facts

No.	Unit	Year	Canada	Nfld.	P.E.I.	N.S.	N.B.
54 Labour force income profile							
Number of taxfilers	'000	1989	17,903	361	83	589	479
Income:							
Number reporting	'000	1989	17,849	360	83	588	478
Amount	\$ million	1989	417,810	6,244	1,508	11,741	8,895
Median	\$	1989	18,100	12,800	14,500	15,600	14,400
Canadian index	%	1989	100.0	70.7	80.1	86.2	79.6
Labour force income:							
Number reporting	'000	1989	14,108	288	68	452	366
Amount	\$ million	1989	334,074	5,275	1,211	9,329	7,197
Employment income:							
Number reporting	'000	1989	13,907	278	67	444	359
Amount	\$ million	1989	323,421	4,495	1,070	8,797	6,594
Median	\$	1989	18,600	10,200	11,500	15,800	13,800
Canadian index	%	1989	100.0	54.8	61.8	84.9	74.2
Self-employment income:							
Number reporting	'000	1989	1,823	32	12	53	35
Amount	\$ million	1989	20,813	229	111	656	347
Unemployment insurance benefits:							
Number reporting	'000	1989	2,817	143	27	132	126
Amount	\$ million	1989	10,654	779	141	532	603
U.I. dependency ratio	%	1989	3.29	17.34	13.21	6.05	9.15
Canadian index	%	1989	100.0	527.1	401.5	183.9	278.1
55 Economic dependency profile							
Transfer payments:							
Amount	\$ million	1989	49,494	1,401	311	1,932	1,613
Employment income	\$ million	1989	323,421	4,495	1,070	8,797	6,594
Economic dependency ratio (EDR)	%	1989	15.30	31.17	29.02	21.97	24.46
Canadian index	%	1989	100.0	203.7	189.7	143.6	159.9
Unemployment insurance benefits:							
Amount	\$ million	1989	10,654	779	141	532	603
Contribution to EDR	%	1989	3.29	17.34	13.21	6.05	9.15
Family allowance benefits:							
Amount	\$ million	1989	2,521	64	14	86	73
Contribution to EDR	%	1989	0.78	1.42	1.27	0.98	1.11
Federal sales tax credits:							
Amount	\$ million	1989	580	17	3	23	20
Contribution to EDR	%	1989	0.18	0.38	0.30	0.26	0.30
Child tax credit benefits:							
Amount	\$ million	1989	2,094	68	14	81	73
Contribution to EDR	%	1989	0.65	1.51	1.33	0.92	1.10
Old age security benefits:							
Amount	\$ million	1989	8,678	144	42	297	231
Contribution to EDR	%	1989	2.68	3.21	3.90	3.38	3.50
CPP/QPP benefits:							
Amount	\$ million	1989	10,620	154	43	382	271
Contribution to EDR	%	1989	3.28	3.42	4.00	4.34	4.11
Other pension benefits:							
Amount	\$ million	1989	14,347	175	54	531	343
Contribution to EDR	\$	1989	4.44	3.90	5.01	6.04	5.19

Key labour and income facts

Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Year	Unit	No.
4,567	6,719	749	624	1,593	2,093	17	29	1989	'000	54
4,553	6,697	746	622	1,589	2,088	17	29	1989	'000	
94,861	177,048	14,837	12,508	38,082	50,854	436	796	1989	\$ million	
16,600	20,500	15,400	15,600	18,500	18,800	22,100	20,500	1989	\$	
91.7	113.3	85.1	86.2	102.2	103.9	122.1	113.3	1989	%	
3,487	5,404	558	488	1,330	1,625	15	26	1989	'000	
77,172	141,750	11,420	9,322	30,871	39,393	394	740	1989	\$ million	
3,422	5,357	548	482	1,313	1,597	15	26	1989	'000	
73,708	139,460	11,066	9,028	30,063	38,046	374	720	1989	\$ million	
17,900	20,900	16,200	14,400	18,300	19,100	21,400	21,800	1989	\$	
96.2	112.4	87.1	77.4	98.4	102.7	115.1	117.2	1989	%	
334	649	101	137	231	236	2	2	1989	'000	55
4,211	8,552	862	1,160	1,879	2,776	16	14	1989	\$ million	
874	746	103	83	224	350	4	5	1989	'000	
3,464	2,290	354	295	808	1,347	20	20	1989	\$ million	
4.70	1.64	3.20	3.27	2.69	3.54	5.23	2.84	1989	%	
142.9	49.8	97.3	99.4	81.8	107.6	159.0	86.3	1989	%	
12,321	17,564	2,125	1,810	3,748	6,585	37	48	1989	\$ million	
73,708	139,460	11,066	9,028	30,063	38,046	374	720	1989	\$ million	
16.72	12.59	19.20	20.05	12.47	17.31	9.82	6.60	1989	%	
109.3	82.3	125.5	131.0	81.5	113.1	64.2	43.1	1989	%	
3,464	2,290	354	295	808	1,347	20	20	1989	\$ million	
4.70	1.64	3.20	3.27	2.69	3.54	5.23	2.84	1989	%	
621	894	110	108	258	284	3	8	1989	\$ million	56
0.84	0.64	0.99	1.19	0.86	0.75	0.75	1.06	1989	%	
168	179	30	25	50	63	--	1	1989	\$ million	
0.23	0.13	0.28	0.28	0.17	0.17	0.12	0.16	1989	%	
552	616	111	116	224	229	2	7	1989	\$ million	
0.75	0.44	1.00	1.28	0.75	0.60	0.58	1.04	1989	%	
2,093	3,257	470	386	601	1,152	2	3	1989	\$ million	
2.84	2.34	4.25	4.27	2.00	3.03	0.64	0.39	1989	%	
2,513	4,270	472	401	739	1,370	4	3	1989	\$ million	
3.41	3.06	4.26	4.44	2.46	3.60	1.01	0.41	1989	%	
2,909	6,060	578	480	1,069	2,139	6	5	1989	\$ million	57
3.95	4.35	5.22	5.31	3.56	5.62	1.49	0.71	1989	%	

Key labour and income facts

Notes and definitions

No.

- 1 Persons aged 15 and over who are employed or unemployed.
- 2 Labour force as a proportion of the population aged 15 and over.
- 4 Persons who usually work less than 30 hours per week.
- 7 Unemployed as a proportion of the labour force.
- 8 This rate, and rates shown as Indicators 9 and 10, are described in *The Labour Force* (71-001), February 1987.
- 9 The full-time labour force includes persons working full time, those working part time involuntarily and unemployed persons seeking full-time work.

The part-time labour force includes persons working part time voluntarily and unemployed persons seeking part-time work.

On the margins of the labour force includes persons not looking for work because they believe none is available or because they are waiting for recall or for replies from employers.
- 10 The rate shows hours lost through unemployment (unemployed multiplied by average actual weekly hours) and through underemployment (that is, short-time work schedules and involuntary part-time employment) as a proportion of hours worked plus hours lost.

No.

- 30 Data are for agreements involving bargaining units of 500 or more employees. Canada figures include workers covered by federal labour legislation plus agreements involving workers in more than one province.
- 33 Labour income comprises gross wages and salaries (including directors' fees, bonuses, commissions, gratuities, taxable allowances and retroactive pay) and supplementary labour income (payments made by employers for the benefit of employees, including contributions to health and welfare schemes, pension plans, workers' compensation and unemployment insurance).
- 34 Labour income per employee is calculated using LFS estimates of paid workers excluding those absent without pay.
- 46 For an explanation of the methodology underlying the Low Income Cut-Offs, see *Income Distributions by Size in Canada* (Annual, Catalogue 13-207).
- 54-55 Data are derived from tax returns filed in the spring of the year following the reference year. The mailing address at the time of filing determines the province.

In the works

Here are some of the topics to be featured in upcoming issues of Perspectives on labour and income.

■ **Year-end review**

A wrap-up of the changes and trends in the labour market in 1991.

■ **Polarization of incomes in the United States and Canada**

The paper looks at the polarization of incomes that has occurred between 1967 and 1989 for Canadian and American households and the key factors underlying the polarization in the two countries.

■ **Workforce turnover: Hirings situation**

Hirings are one aspect of labour market dynamics. This article looks at the incidence of hirings among different industries as well as the characteristics of the persons hired.

■ **Absence from work**

This study will examine what categories of workers are most prone to absences from work and for what reasons.

■ **Dual-earner families in Canada**

This paper describes changes, between 1967 and 1989, in contributions to family incomes made by working spouses and looks at proportions of such spouses with similar characteristics.

■ **Hard at work**

In 1990, more than 1.7 million persons worked 50 or more hours per week. Who are these people, where do they work, what do they do, and why do they put in so many hours on the job?

■ **Single-industry towns**

Many remote communities depend upon one main industry, such as fishing, forestry or mining. This study examines, over the 1971 to 1986 period, three groups of single-industry towns.

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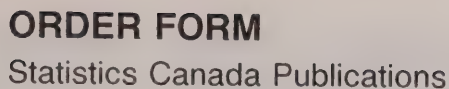
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